a W. R. C. Smith publication

FIFTY CENTS

Textile Industries

Formerly "COTTON"

JANUARY, 1959

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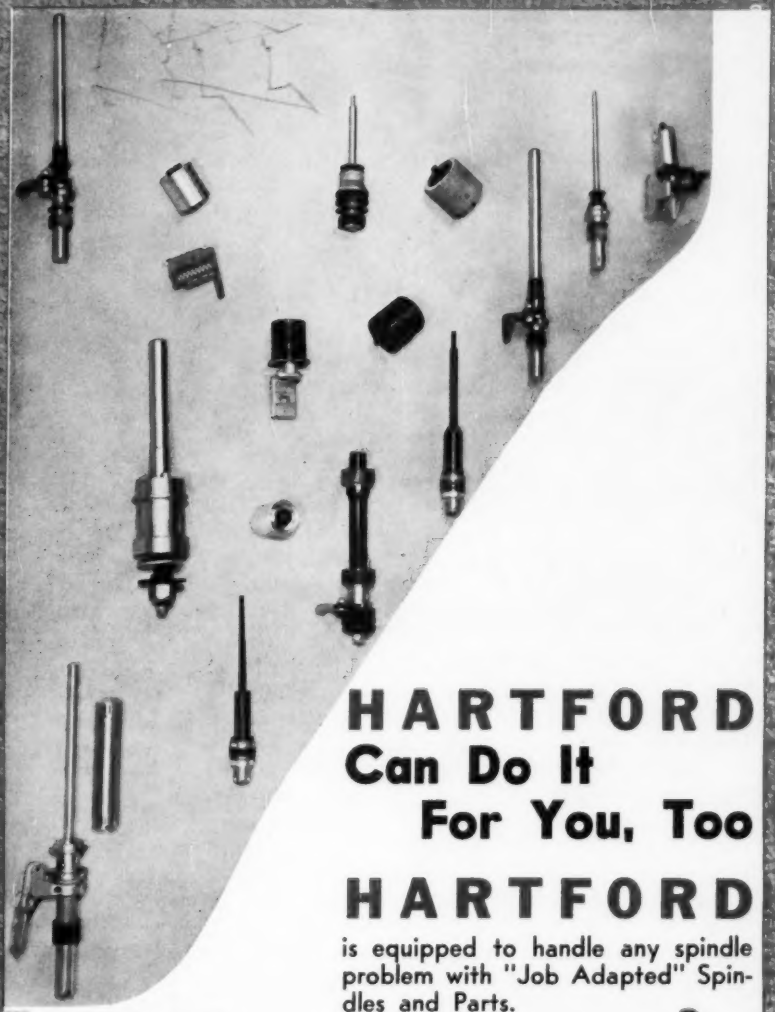

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For your 1958 Index of TI articles, see page 85

AT CONE MILLS

DIEHL transmitters improve product quality

Three hundred Draper looms powered by the latest type DIEHL Power Transmitters were recently installed as part of an important new modernization program at Cone Mills Corporation's Minneola Plant, Gibsonville, N. C., with most satisfactory results in the improvement of loom performance and product quality.

DIEHL Power Transmitters were developed especially for Draper looms, and feature a fast, positive clutch-brake mechanism combined with an inverted type motor which provides high inertia without need for a separate flywheel. This design produces a constant steady pull for more efficient weaving and better quality greige goods, in the opinion of a plant official. "Increased efficiency of looms will be joined by lower operating costs because of the combination of Draper X2 looms and DIEHL Transmitters," he said. The looms now run at 186 picks per minute.

Cone Mills plant officials are favorably impressed with the positive action of the clutch-brake mechanism, the pinion driving shaft construction which eliminates the thrust bearing on the loom, the speed and ease of removal and replacement of the transmitter for inspection and servicing, the totally enclosed housing design which protects against weave room lint and fly, and the negligible maintenance and down-time costs.

DIEHL Power Transmitters can increase production and efficiency—at lower operating costs and less down-time—in your mill. Specify them for your looms.

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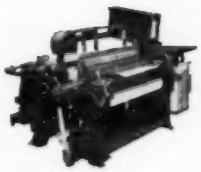

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Textile Industries

formerly "COTTON"

Vol. 123, No. 1
January 1959

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TIME SAVER for busy readers

Here is a summary of some of the major articles in this issue

Use it to organize your reading time most effectively

Textile recovery 53

■ The past few months have seen an encouraging improvement in activity in the textile industry; the increase in spindle-hours operated is examined in this article. However, the author points out that the liquidation of spindles may have caused the "normal" average of spindle-hours operated to have shifted down to a new level.

Here's that new shuttleless loom 54

■ The Draper shuttleless loom has been undergoing mill trials for about two years and has been a perennial topic of conversation whenever mill men got together. However, only rumors about the machine have appeared in print. Early in December, the Draper Corp.'s director of research presented a paper giving details of the loom's operation and capabilities; it is published here, with illustrations of the loom, its parts, and the fabric made on it.

Magog standardizes printing 56

■ Dominion Textile Co.'s Magog Print Works, Magog, Quebec, has established printing production standards for patterns regardless of their complexity or difficulty in printing. This article is the first in a series which describes how the standards were developed and how they are used.

Some causes and effects of roll run-out 59

■ What roll run-out is, what causes it, what it will do to yarn quality, how to measure it, and how to correct it are all discussed by the head of the mechanical department of a large textile organization.

How to quickly find loom-stop causes 64

■ At one southern mill, a portable device for analyzing tension on running looms discloses bad-work symptoms and leads to higher production. The device has helped the mill to reduce loom stops 15 per cent.

Shrink for fancy yarns 66

■ Thermoplastic fibers such as polyethylene and polyvinyl chloride shrink considerably when heated. Here's how they can be used to produce novelty yarns on conventional twisters.

Starting a quality control program 70

■ Here is a mill-proved, step-by-step approach to a sound quality control program. The over-all design is outlined for cotton, filament, woolen, and worsted systems.

Processing men's wear fabric blends 73

■ When signs of declining markets for the specialty finishes of Northern Dyeing Co., Washington, N. J., indicated to management that the time had come for diversification, plans had already been laid for entering the men's wear field. Here's how they did it.

Know waste factors for better cost control 79

■ There are many ways in which a mill can keep track of its waste and standardize and use the resulting data to the very best advantage. The author discusses some of these ways, with particular reference to yarn waste.

Manufactured blondes 98

■ How a bleaching firm prepares cattle hair, goat hair, and other hair fibers for taking pastel shades.

Tips for learner-knitters 119

■ Listed here by a vereran knitter are some fundamentals of knitting that management often may overlook, assuming that the knitter mastered them early in his career and now performs them automatically. The author submits the points to be used as training aids and as constant "refreshers."

How Mauney makes circular knit leotards 122

■ Leotard tights made of stretch yarn are one of the hottest items in the knit goods field. This article tells how Mauney Hosiery Mills, Inc., Kings Mountain, N. C., makes the leotards and colored stretch stockings on Komet Links and Links machines.

COMING NEXT MONTH

■ The February, 1959, issue of TEXTILE INDUSTRIES will contain a special section on purchasing for the textile industry. Included will be articles on the purchasing of machinery, a case history of a yarn mill which has completed an extensive modernization program, and a discussion of ways to prevent irregularities in purchasing.

The February number will also continue the story of how Magog Print Works have standardized their printing operation, how a mill saved 20 per cent on loom parts by a sound supply control system, and a discussion of three- and four-cylinder woolen cards.

Also, for the first time, J. B. Goldberg, textile consultant, will present his well-known annual review of textile research achievements exclusively in TEXTILE INDUSTRIES. "Textile Research Achievements of 1958" will be a standard reference to the progress which textile researchers made last year.

TEXTILE INDUSTRIES is indexed in the "Applied Science & Technology Index"

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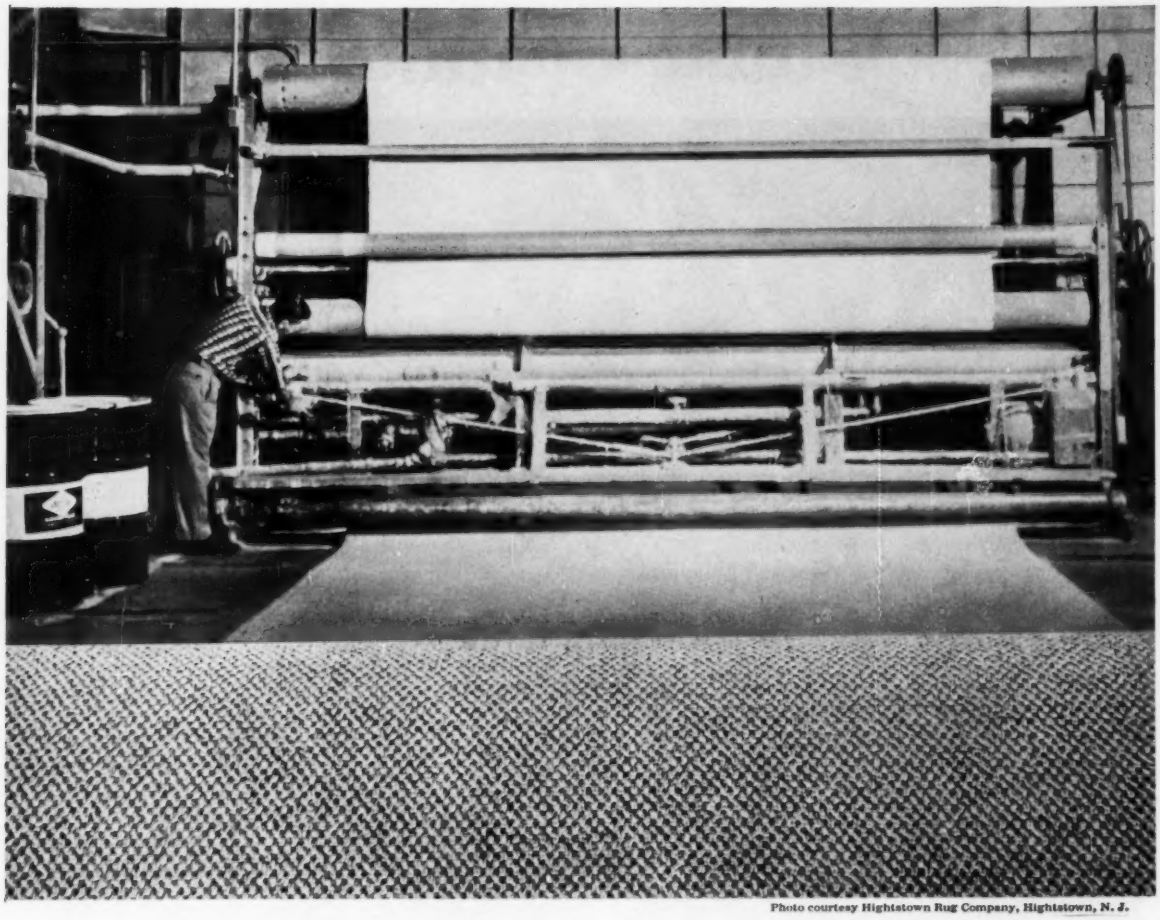

Photo courtesy Hightstown Rug Company, Hightstown, N. J.

Best way to back up a bright idea

Look closely and you will see that this is a *knitted* carpet—made by looping rather than weaving. Yet this carpet has the general appearance, good "hand" and wearing qualities of considerably more expensive woven carpeting – all of which adds up to a pretty bright idea.

How is this possible? It's due–in large part–to the backing, for the looser construction of knitted carpets demands a backing material of superior tuft-lock and fiber-binding characteristics. And these are the major reasons why one of the country's leading carpetmakers chose a combination of CHEMIGUM LATEX and PLIOVIC LATEX to back up its bright, new knitted line.

Other benefits of the backing include dimensional stability, excellent body, good color stability and nonskid properties. Moreover, it's easy to compound and apply, processes well and is permanent–thanks primarily to the CHEMIGUM LATEX.

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That's the verdict returned by mills who have tested the new Garland Plastic Loom Picker.

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And remember, Garland is the first American manufacturer to custom mould these plastic loom pickers.

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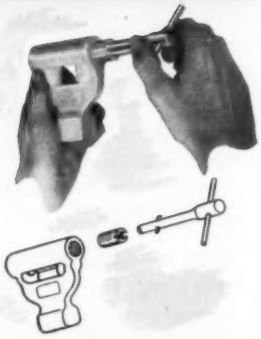

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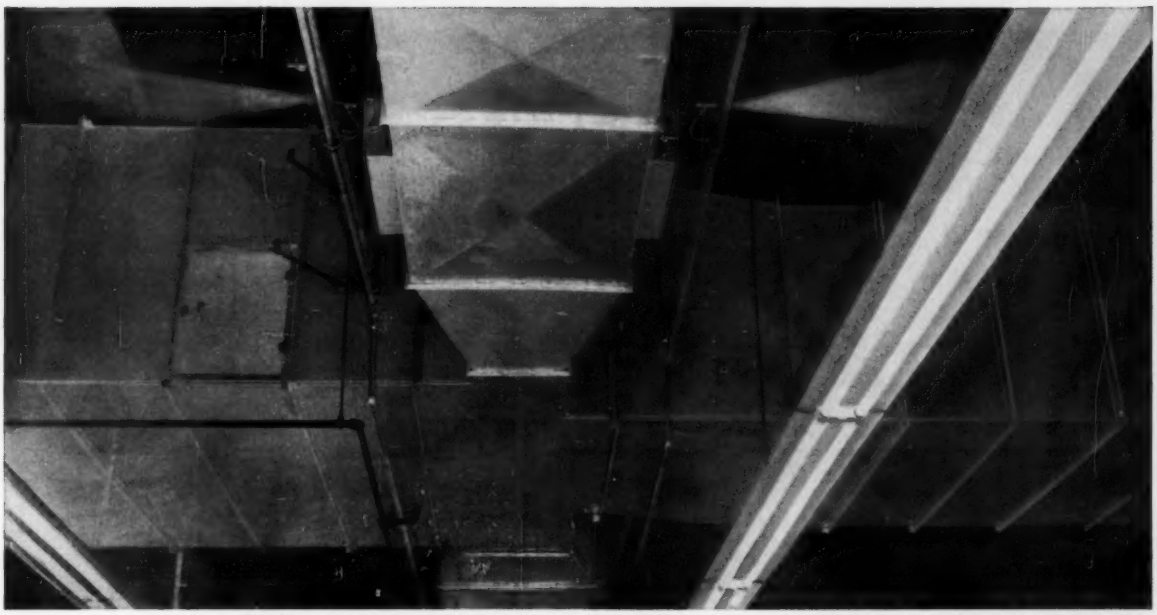


Finishing department at Peerless Woolen Mills, Cleveland, Tenn., showing ductwork and zone control atomizers.

PEERLESS WOOLEN MILLS

chose Amco Air Conditioning at its Cleveland Tenn. Plant to be

INDEPENDENT OF OUTSIDE WEATHER

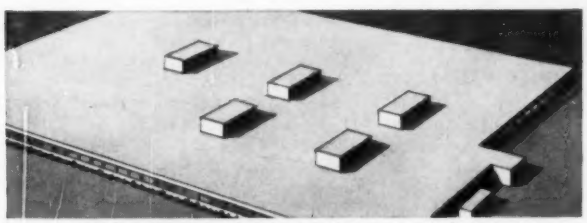
An Amco dual (split) system has given Peerless Woolen Mills exactly what was wanted... tailor-made *inside air* regardless of *outside weather!*

Amco Central Station Air Conditioning, augmented by room atomizers, permits each of the different manufacturing areas in this 10-acre building to be controlled separately.

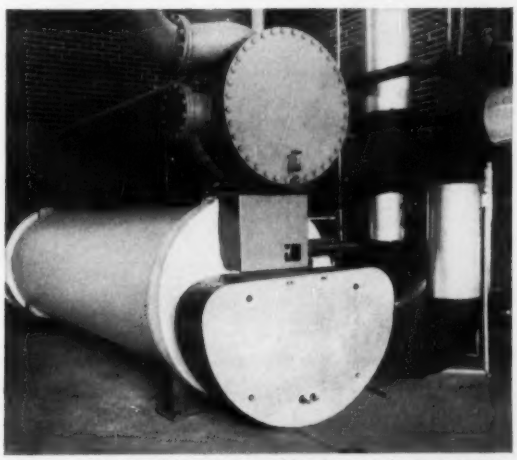
Peerless spared nothing to assure this *profitable precision control* of temperature and humidity. Over 1000 tons of refrigeration capacity and 3 miles of ductwork were provided. Five of industry's largest commercial fans were installed.

If you have a textile mill conditioning problem, ask an Amco engineer to call. There's no obligation.

Amco Aspirating Cabinet controls condition of air in weave room. Air temperature and humidity register on recorder chart.



On top of mill building are 5 apparatus rooms, each housing fan, air washer, filter, and chilled water tank.



1000-ton capacity refrigeration machine is used for temperature control the year-round. Condenser is at top; chiller at bottom.

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Makers of Air Conditioning Systems and Textile Mill Equipment Since 1888

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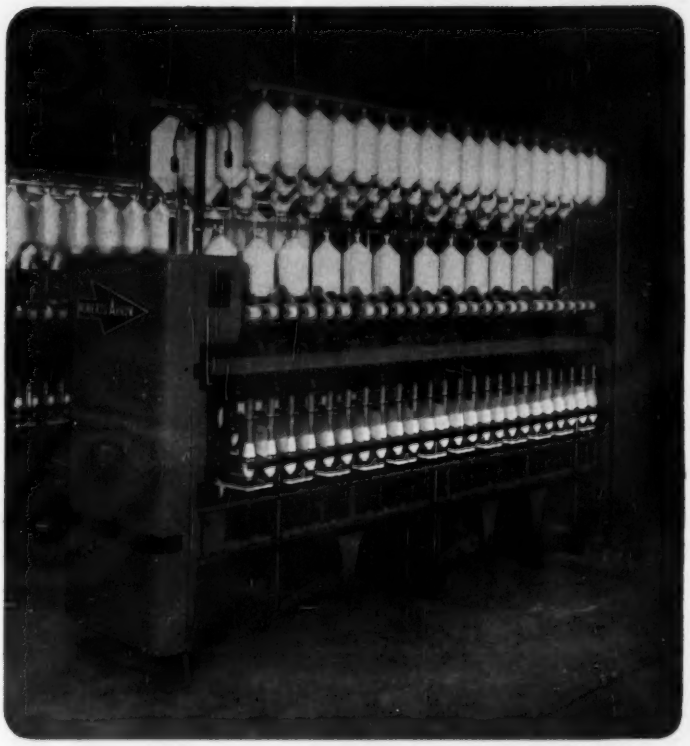

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ARROW SPINNING features:

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4. For lock-knit fabrics, where the cold-dyeing batchwise methods (for example, on the beck) are economically attractive and where Procion fastness to light, washing and rubbing offers technical benefits.

5. For tufted viscose rayon carpeting, where the shades and fastness of Procion dyes offer advantages over the commonly used directs, and where the novel pad-batch and cold dyeing methods are particularly attractive.

IN PRINTING APPLICATIONS

1. For brighter, faster shades on upholstery and drapery fabrics.

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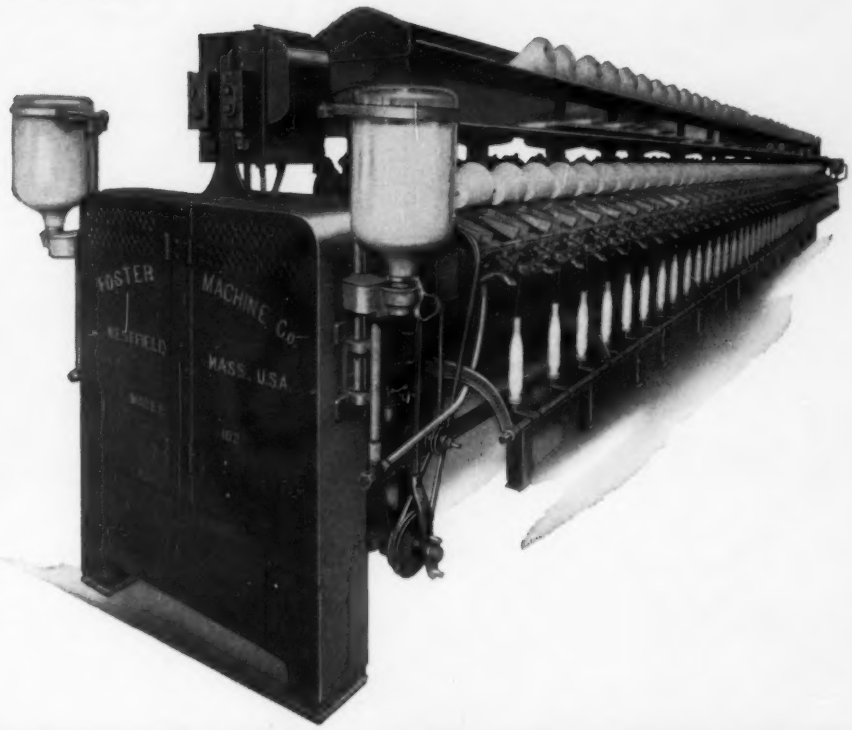
FOSTER MODEL 102

Flexibility - Economy - Quality Winding



What "Flexibility" Means To YOU

The Foster Model 102 Winder is a *safe* investment, because it is adaptable to changing requirements. And changing requirements are the order of the day. This machine is suitable for any twist or count of yarn (except the very coarsest) and for any type of spun fibre — natural, synthetic or texturized. It can be equipped to wind traverses from 2¼" to 6", and to wind knitting cones, warper cones, parallel tubes, or dye packages; or can be built to wind 7" traverse. It will wind any cone taper commonly used and will wind at nine different angles from 9° to 18°. It may be equipped with yarn conditioning attachment, will efficiently handle damp yarn and soft twist yarns requiring little or no tension. Spindles can be readily added to existing machines.

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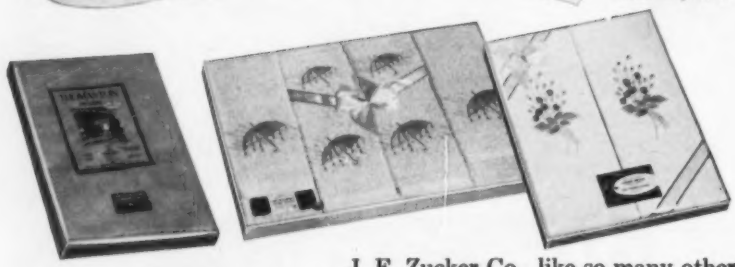

J. F. Zucker Co., like so many other Textile people, has taken advantage of new low-cost plastic films teamed with economical Hayssen automatic wrapping to give them the ultimate in finer protective packaging.

Hayssen is the only proven machine to successfully overwrap in polyethylene without cards, boxes or trays.

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Shorts and Remnants

by J. C. C.

► Happy and Prosperous 1959 to all of our readers, and that includes you if you just tuned in. Our New Year's resolution is: "Be nice to everyone (*especially customers*)."

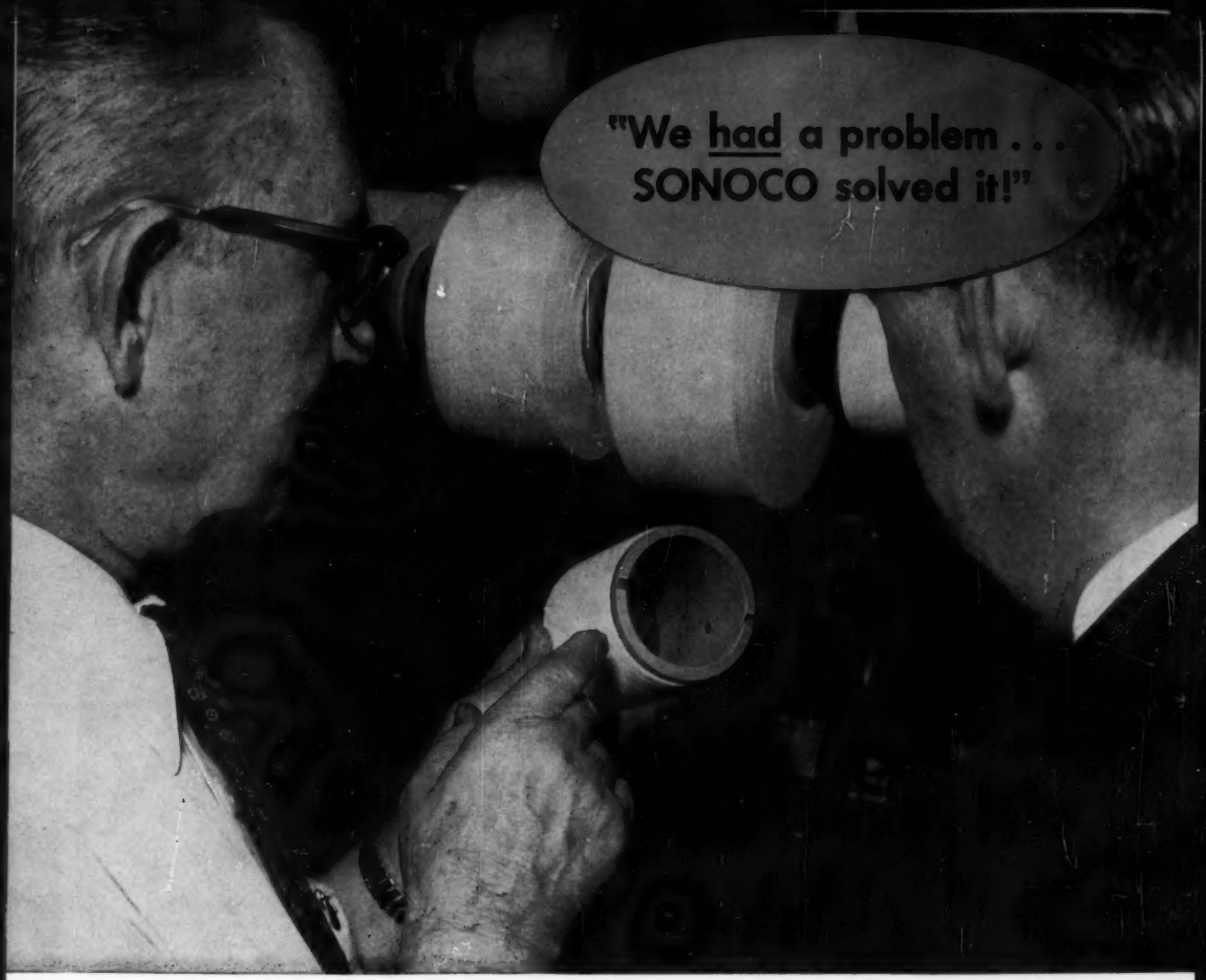
► And taking a pitch from TI's own advertising with the theme "Textiles U.S.A.," here's a newcomer to wish

you a happy New Year with us, and we quote from the ad:

> "Babies 'bless 'em' . . . over 4,000,000 new ones every year in the U. S., a new one every 8 seconds! Textile users from the start . . . not only for 3 cornered pants, but layettes, dresses, bootees, crib sheets, blankets, cloth books and toys, wash cloths towels—soft pink and blue. Children's and infants' wear alone takes 320,000,000 lb of fiber a year."

And that's textiles for you. If any of our readers want reprints of the three "Textiles U.S.A." ads of 1958, just write to ole S&R.

► And 1st on the docket for 1959 is the weather report for January: "Temp. 21-26 (3 to 6 above normal), 7-20" snow, 2-6" rain, 1-7 near blizzard; 8-15 mild but not clear; 16-23 clear, cold, then mild; 25-31 thaw, stays mild." This is a new, exclusive feature of S&R, quoting from the one and only "Old Farmer's Almanac" (price 35c from Yankee Books, Inc.). Above forecast "applies to Boston but will work for other places by subtracting one day for each time zone west, by reading five deg. lower temperature for every 100 miles north of 42 Lat. N. or 5 deg. higher for every 100 miles south of 42 Lat. N. and by



THE NEED: One-time-use cheese core for cotton yarns

An economical, lightweight, one-time-use cheese core for stocking and shipping was needed by the textile industry.

This requirement was discussed with Sonoco and the production of a suitable core was assigned to research specialists and engineers. The result was a highly durable spiral core, especially punched to seat properly on the spindle, and notched on one end to serve as a guide for instantaneous positioning in respooling. This core eliminates mill inventory and loss or damage associated with more expensive carriers; however, equal performance in spooling is assured. For yarn identification, these cores are available with printed surfaces or colored inside or outside wraps.

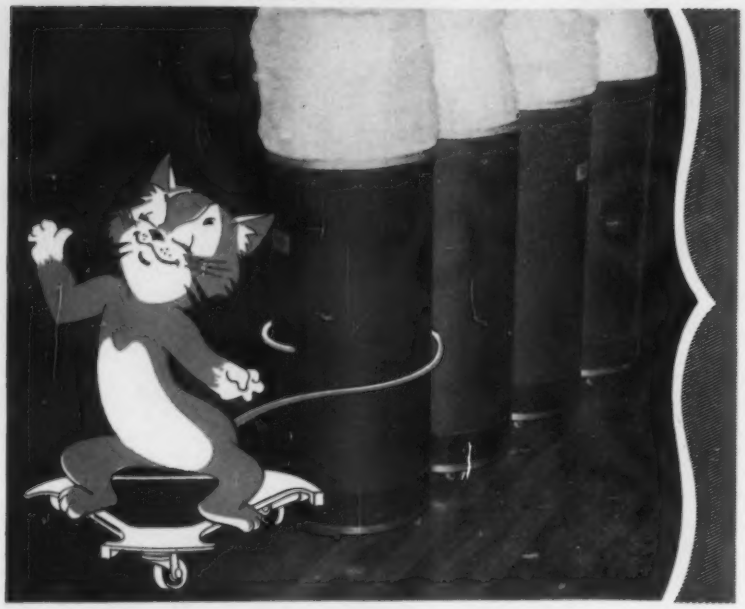
Only Sonoco, with its modern laboratory, engineering and production facilities—based on 60 years' experience—could solve this problem with an economical and efficient carrier. It is typical of countless cases where Sonoco leadership in the progressive development of low cost, dependable paper cones, tubes, cores and spools has benefited the industry. Let Sonoco help you!

SONOCO

Products for Textiles

SONOCO PRODUCTS COMPANY

Main Office—Hartsville, S. C. Mystic, Conn. • Akron, Ind. • Lowell, Mass. • Phillipsburg, N. J. • Longview, Texas • Philadelphia, Pa. • La Puente, Cal. • Atlanta, Ga. • Granby, Quebec • Brantford, Ontario • Mexico, D. F.



SOUTHERN STATES LARGE COILERS AVAILABLE WITH NEW ALLEY-SKAT TO SPEED DOFFING AND CONVEYING

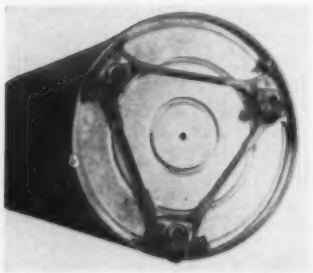
Large-size Southern States Coilers are now available with ALLEY-SKAT, the simplest, most economical can conveyor system ever developed. The problem of doffing and moving heavier cans may now be solved with a low capital outlay.

For example, suppose you are equipping your mill with large Southern States Coilers: if you decide to employ ALLEY-SKATS, you can specify that special cantable adapter plates be included at no extra cost. The only additional charge is for the can latches and ALLEY-SKAT dollies, which are available at nominal cost.

The latches and dollies are easily and quickly installed on any standard can without drilling or alteration.

The ALLEY-SKAT is strictly optional equipment. However, if you are concerned with handling large cans, as most mill men are, we suggest that you investigate the ALLEY-SKAT.

Get full information from your Southern States representative or write for Bulletin 501.



ALLEY-SKAT Dolly mounts to inside of can rim. Dollies are made of finest materials, including heavy-duty mill-type casters.

Cantable adapter plate is available as standard equipment on Southern States Coilers at no extra charge.

Doffing of large, tightly packed cans is quickly and easily accomplished. No lifting required.

SOUTHERN STATES EQUIPMENT CORP.
HAMPTON, GEORGIA

Shorts and Remnants

considering every 1000 feet of altitude is five degrees cooler."

The most widely read feature in the newspaper is the weather forecast. So here we are—First in the Textile Field; First with the Finest and Best—bringing you the weather and holidays too. Besides New Year's include Jan. 8—Battle of New Orleans (La.); Jan. 19—Robert E. Lee's birthday (South); Jan. 26—MacArthur Day (Ark.); and Jan. 30—FDR's Day (Ky.).

► And if you missed the "I don't Care" stories, you didn't miss much except one carry-over from Christmas was: "I don't care what you say your name is, fat boy, you gotta get those reindeer off my roof."

► And we'll start off the year with a quote from another textile poet, **Thurston Powell** of Alexander City, Ala. Maybe you'll get a kick out of "The Bullet Eater" from "The Wailing Wind" by Candor Press, Dexter, Mo.:

Once was a little boy named Toad
Ate many things that made a load—
When he became
Conscious of his name
He really went insane,
He began eating shot—
And some powder, to;
One day he ate a match-
And up he blew!

Back Pats for "Wash & Wear"

"Could you please send me 10 copies of your 32-page report on 'Wash and Wear' in the November issue. I found this extremely interesting reading."

ROGER MILLIKEN
Spartanburg, S. C.

". . . This is an excellent collection of up-to-date information objectively presented. I would like to buy 100 reprints of it . . ."

SYDNEY M. CONE, JR.
Cone Mills Corp.
Greensboro, N. C.

"Would appreciate it very much if you would send me twelve (12) reprints . . ."

W. S. MANNING
Burlington House Fabrics Co.
Burlington, N. C.

". . . I think you have done an excellent job and you are to be congratulated on it. . ."

JAMES A. STEVENSON
Bradford Dyeing Assn. (USA)
Westerly, R. I.

► Letters above are first four com-

(Continued on page 18)

HARSHAW UVERSOFT "D"

imparts soft hand with little reduction in moisture absorbency

● UVERSOFT "D" is a cationic surface active agent which produces a full, soft hand with little, if any, reduction in moisture absorbency of the TREATED material. It can be exhausted from a long bath, and has an excellent retention in an aqueous system. UVERSOFT "D" provides a maximum economy in application and use.

UVERSOFT "D" is an outstanding anti-static agent. It should be considered for situations where the accompanying softening action is not objectionable.

Send for folder containing complete technical information.

THE HARSHAW CHEMICAL COMPANY ● 1945 East 97th St., Cleveland 6, Ohio

Send me TECHNICAL BULLETIN ON UVERSOFT "D"

My Name_____

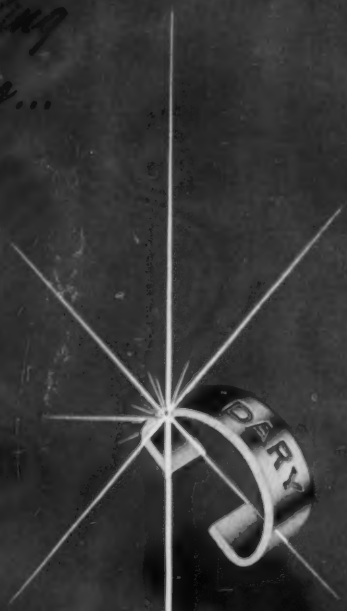
Company Name_____

Street Address_____

City_____ Zone____ State_____

Since 1898

Dary Ring Travelers...



THE DARY RING TRAVELER CO.

TAUNTON, MASSACHUSETTS

LINDSEY I. PHILLIPS, Treasurer, Taunton, Mass.

Consult your friendly Dary Representative:

JOHN H. O'NEILL — Box 720, Atlanta, Ga.

JAMES H. CARVER — Box 22, Rutherfordton, N. C.

CRAWFORD "JACK" RHYMER — Box 2261, Greenville, S. C.

Sculptures colorfully carved in *National LANAMID® Premetalized Dyes!*

National Aniline's new LANAMID Dyes are *made-to-order* for carpet and upholstery fabrics. Particularly when you are running sculptured patterns in wool or nylon!

Neutral-dyeing LANAMIDS substantially reduce dyeing time required . . . protecting the inherent quality of the fiber and preserving surface-interests in piece-dyed fabrics.

They are highly recommended for cross-dyeing unions and blends and continuous dyeing of raw wool stock. Fastness and shade are not affected by rubberized backing. And, since they are non-selective, LANAMIDS give uniform coverage on varying grades of wool, free of heathery effects.

High average fastness and similar working properties make LANAMIDS perform well in combinations. Shades build up evenly to the required depth, formulations are precisely reproducible time after time.

There are 16 LANAMIDS now . . . and new additions are on the way. Write today for samples.

NATIONAL ANILINE DIVISION

40 RECTOR STREET, NEW YORK 6, N. Y.

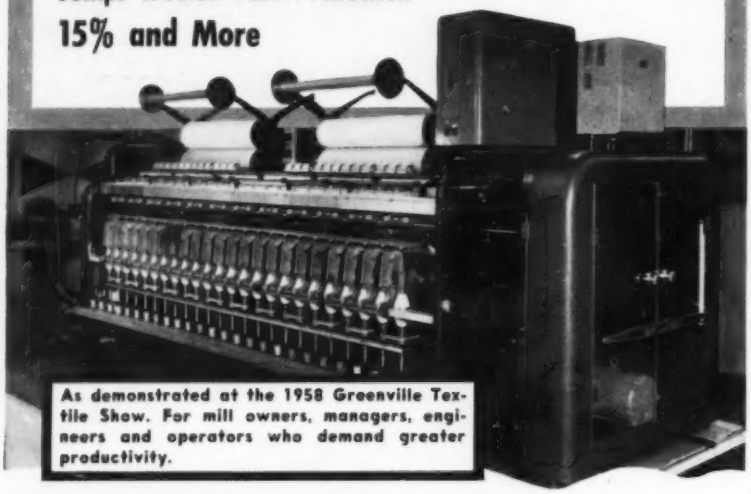
Atlanta Boston Charlotte Chattanooga Chicago Greensboro
Los Angeles Philadelphia Portland, Ore. Providence San Francisco

Allied Chemical

NEW D & F DEVELOPMENT...

Variable Speed Ring Spinning

Jumps Woolen Yarn Production 15% and More



As demonstrated at the 1958 Greenville Textile Show. For mill owners, managers, engineers and operators who demand greater productivity.

NOW AVAILABLE—For New or Present Model F's

Profit-minded management is quick to recognize the advantages of this new D&F Development of Variable Speed Spinning. Management is also quick to question, "why continue to operate at conventional spinning speeds," . . . when a new D&F Model F, with an Adjustable Variable Speed Motor Drive and other technological advances, can UP woolen yarn production 15% or more. Furthermore, the Model F's already in your mill can be modernized economically to approximate similar increases.

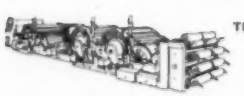
PROOF BY COMPARISON

Comparative Production Figures ("Standard Conventional Speeds Vs. Variable Speed"), previously published by Davis & Furber, show the type of daily increase in yarn production achieved in actual mill installations. Send for these production figures. Compare them with your own. See what these increases can mean to your own profit picture.

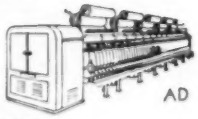
INVESTIGATION PAYS — GET THE FACTS NOW

Write us for the material available on "Variable Speed Ring Spinning for Woolen Yarns." Or call us direct for immediate action.

DAVIS & FURBER
MACHINE COMPANY



TEXTILE MACHINERY DESIGNERS AND MANUFACTURERS
North Andover, Mass.
Charlotte, North Carolina



AD 14-1

Member — American Textile Machinery Association

CARDS • SPINNING FRAMES • PREPARATORY MACHINERY • WARP DRESSING MACHINERY • FINISHING MACHINERY MACHINERY MODERNIZATION • ACCESSORIES, SUPPLIES, CARD & NAPPER CLOTHING, GARNET WIRE, TAPES & APRONS SPARE PARTS • TECHNICAL SERVICE & CONSULTATION

Shorts and Remnants

(Continued from page 14)

ments received on November issue special Wet Processing section featuring "Wash and Wear." Reprints of this section, a limited number of which are still available, brought requests from others such as **B. L. Whittier,** N. C. State College; **P. J. Fynn,** Dir. Research, J. C. Penney Co., Inc., N. Y.; Institute of Textile Technology; Wyandotte (Mich.) Chemicals Corp. James River Div., Dow Chem. Co., Williamsburg, Va. **Jos. E. Buonanno,** Pres. Metro-Atlantic Inc., Centredale, R. I.; **Daniel R. McIver,** Pres. Original Bradford Soap Works, Inc., West Warwick, R. I.

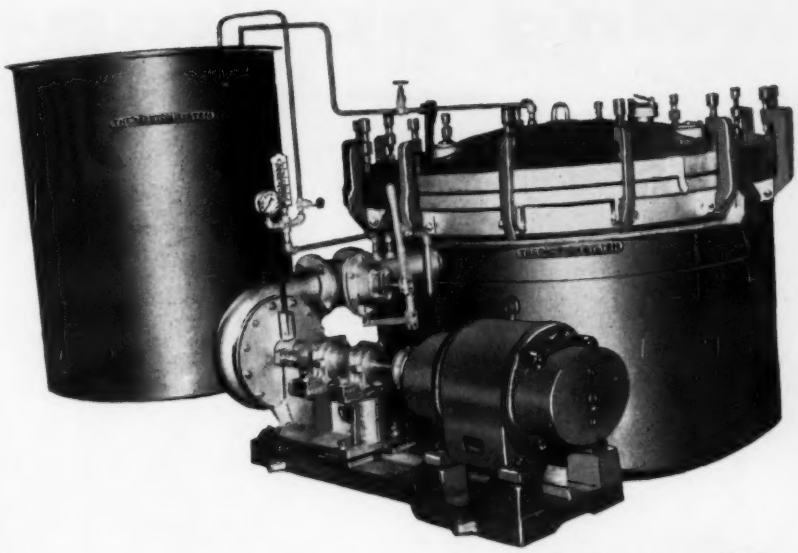
► Those handy return cards get too handy now and then, such as the one received via special delivery (we paid) from Miss Blessings, Reading (Pa.) Dump. And another one came from a good reader at Jacksonville, Ala., who wants to know how he can attend the "textile exposition." He is either a little late for the 1958 Southern Textile Exposition or is planning mighty far ahead for this Show or the Atlantic City ATMA Show — both scheduled for 1960.

Speaking of both shows, pictured below is **James Hunter** (center), Pres. of ATMA and the machinery firm

bearing his name, talking to **Maynard Ford** (left), Pres. of Parks-Cramer Co., Fitchburg, Mass., and **Wm. Leineweber, Jr.,** V. P. & Gen. Mgr. of James Hunter Machine Company's Greenville, S. C., operation, in this firm's booth at the Greenville Show. Also **Eric Seligman,** Mgr. Trumeter Co. N. Y., at right below says the

Greenville Show was the finest and greatest ever and booked for same for 1960. Shown with him are: center, **Rene Jacobus,** Trumeter engr., and **Tom Aydelette,** rep. Greensboro, N. C.

(Continued on page 22)



MORTON SYSTEM STOCK DYEING MACHINE

DURABLE

MORTON SYSTEM DYEING MACHINERY IS BUILT TO TAKE TOUGH TREATMENT!

Careful planning, precision engineering and skilled workmanship all work together in Morton System Dyeing and Drying Machinery.

Morton System Dyeing and Drying Machinery can take every day tough dyehouse treatment . . . and you can count on more efficiency and level shades on cotton, wool or synthetics.

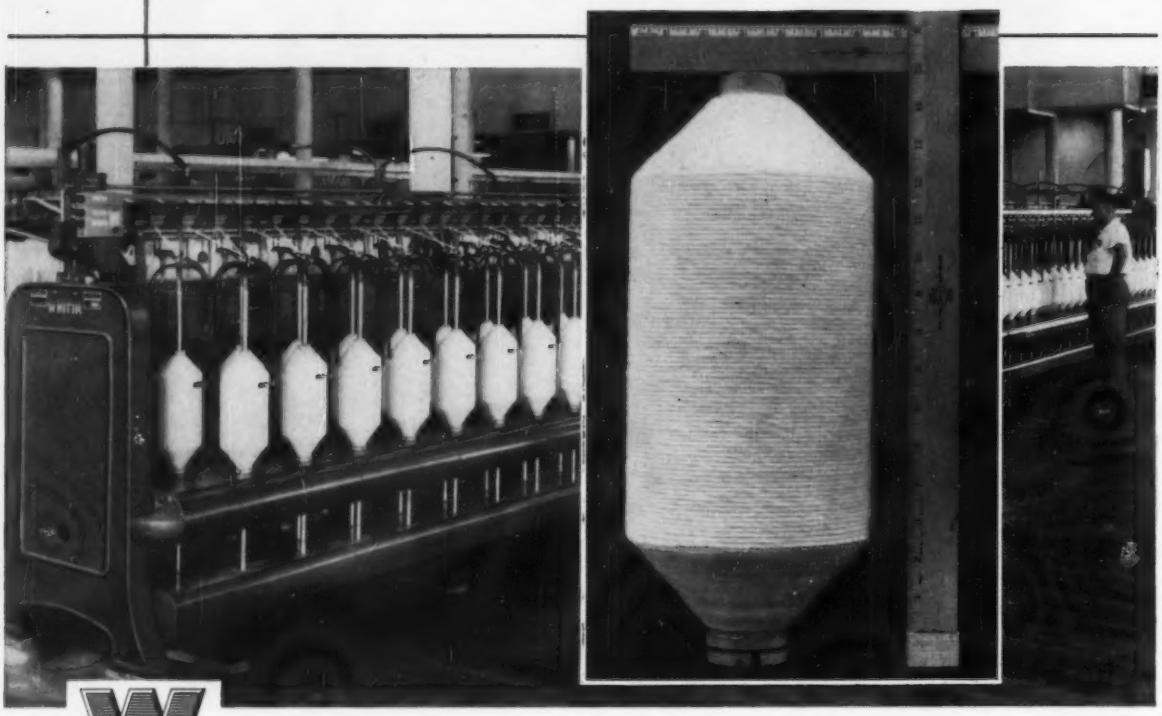
MORTON MACHINE WORKS, Inc.

COLUMBUS, GEORGIA, U. S. A.

Manufacturers of the MORTON SYSTEM Machinery for Dyeing and Bleaching of:
BEAMS -:- PACKAGES -:- STOCK -:- PIECE -:- TOPS

VALVES — PUMPS — BEAM AND PACKAGE EXTRACTORS AND DRYERS — DYE BEAMS, ALL MAKES AND DESIGNS — DYE TUBES — DYE SPINDLES — TUBE SPACERS — STAINLESS STEEL DYE TUBES — CUSTOM BUILT TANKS TO CUSTOMER'S SPECIFICATIONS

Now... reduce costs with NEW Whitin ECONOMY-SIZE roving packages



Whitin again announces another cost-cutting machine! The improved 14" x 6½" Long-Draft HI-PRO* roving frame now offers you all the advantages of larger packages — lower doffing costs and higher efficiency at the same standard speeds as the 12" x 6½" — *and* a substantial saving, too, of from 30-200% in spinning creeling costs with new 85-90 ounce bobbins.

If you are now using Whitin 12" x 6½" Long-Draft frames, it will pay you to investigate the savings to be made by modifying your present equipment to accommodate 14" x 6½" bobbins and by applying any or all of the improvements now standard on the new Whitin 14" x 6½".

*TRADE MARK

New frame improvements include:

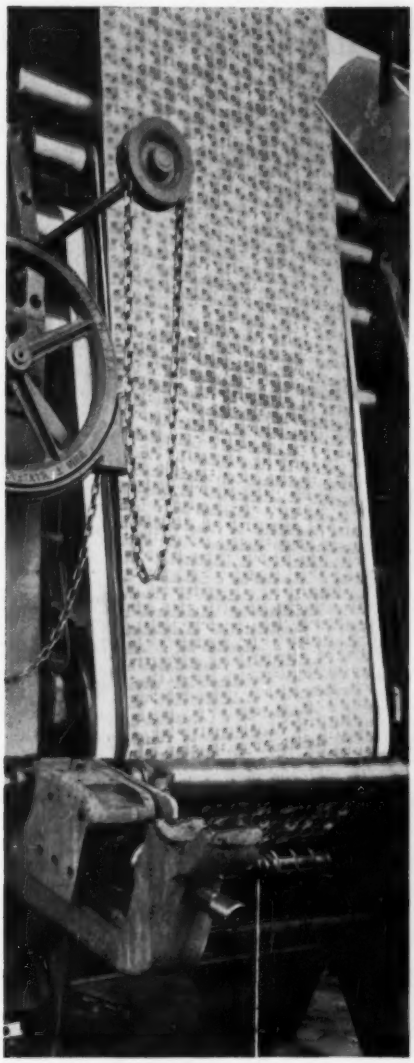
- **UNITROL or unit spring weighting**
- **New clearers**
- **Quick skip gears**
- **Chain drive to twist gears**
- **Helical gearing in head end**
- **Helical bonnet and spindle drive**
- **Anti-friction bearings at all important points**

Write now for further information . . .

WHITIN MACHINE WORKS

WHITINSVILLE • MASSACHUSETTS,

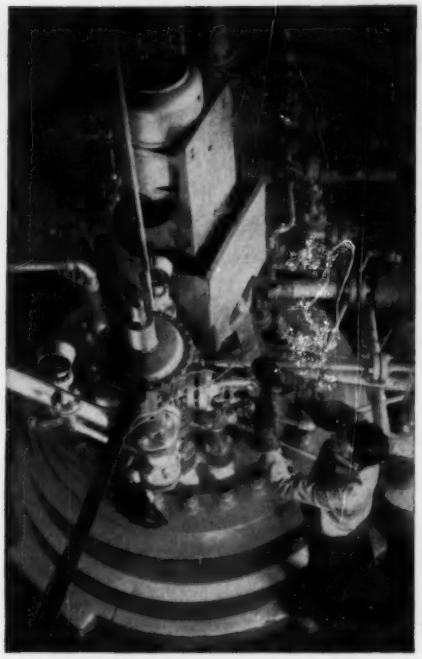
CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.



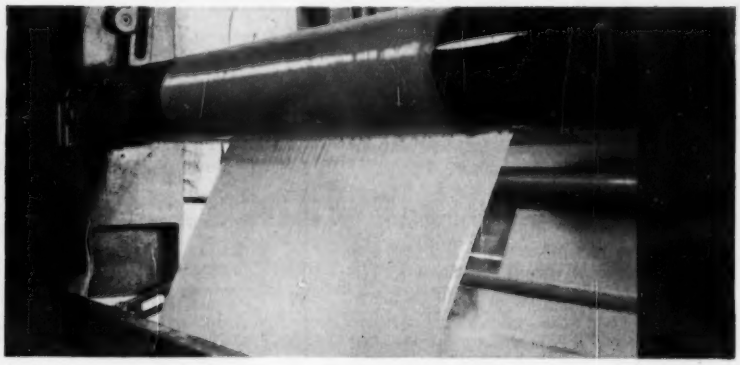
Printing

dyers...
printers...
dye makers

YOUR BEST SOURCE OF SODIUM BICHROMATE *is* MUTUAL



Dye Manufacture



Dyeing

Mutual® Chromium Chemicals

Sodium Bichromate
Sodium Chromate
Chromic Acid
Potassium Bichromate
Potassium Chromate
Ammonium Bichromate
Koreon (one-bath chrome tan)

SOLVAY PROCESS DIVISION
61 Broadway, New York 6, N. Y.

Allied Chemical

MUTUAL Chromium Chemicals are available through dealers and SOLVAY branch offices located in major centers from coast to coast.

Whether you make dyes or use them, you can always depend on the consistent high quality of Mutual sodium bichromate — and the consistent high quality of Mutual *service!*

In an emergency, Mutual can have your sodium bichromate in transit to you in a matter of hours after you place your order. This is typical of Mutual's service, backed by over 100 years of experience as America's *first* producer of chromium chemicals.

MUTUAL CHROMIUM CHEMICALS
SOLVAY PROCESS DIVISION
Allied Chemical Corporation
Dept. 24-1, 61 Broadway, New York 6, N. Y.

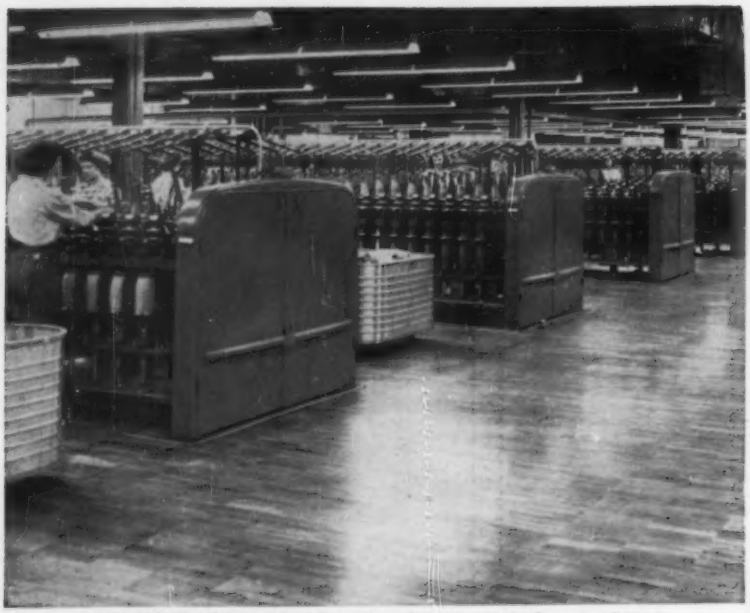
Please send your Bulletin 32,
"Chromium Chemicals," by return mail.

NAME_____ TITLE_____

COMPANY_____

STREET_____

CITY_____ ZONE____ STATE_____



DIRT-RESISTANT Tennantized floor allows faster sweeping. Saves manhours.

Why most money-making mills have TENNANT-maintained floors

Mills that make money *today* usually know their maintenance costs to a penny.

That's why about 9 out of 10 successful mills, large and small, use the TENNANT SYSTEM of Floor Maintenance.

They know, from their own cost records, that this system provides clean, bright floors *at the lowest cost per sq. ft. of any floor maintenance method* available today. Here's why:

SAVES MANHOURS—*Tennantized* floors have 3 times the dirt resistance of most textile floors. Saves cleaning time, cuts sweeping costs, etc.

How the TENNANT SYSTEM cuts floor care costs...

1 **SAVES TIME.** Dirt is easily wiped off surface.

2 **SAVES FLOOR SEAL.** Tennantized floors seldom need refinishing.

3 **SAVES BUFFING.** New method brightens floor; cuts buffing time as much as 80%.

REQUIRES LESS FLOOR SEAL—New custom-fitted TENNANT seals *last longer than any comparable materials we know of.* Cuts annual seal costs and recoating expense. WRITE TODAY *for full details. G. H. Tennant Co., 735A N. Lilac Drive, Minneapolis 22, Minn.*

TENNANT

The Textile Industry's Most Widely Used

FLOOR MAINTENANCE SYSTEM

Methods

Machines

Materials

FLOOR MAINTENANCE SYSTEMS

Shorts and Remnants

(Continued from page 18)

► The AATCC annual meeting in Chicago was without exhibits this time, but a fine session was held to help the horses run at Sportsman's Park. We went the wrong day. The next day "Little Pumpkin" running in the fifth race was a sure thing. The day before Halloween and the first big word S&R's pride-and-joy ever uttered was "Jack-O-Lantern." Sure enough he or she came in and paid $59.80.

► A would-be reader writes our circulation dept. that he "prayed" to get TI but hadn't received a copy yet. So we'll see that his prayers are answered.

► If Howard Bros. Mfg. Co. gets an urgent collect call for ambulance service or a ham sandwich on rye at 3 a.m. on Christmas Eve, they have only themselves to blame. Their mailing piece "Every Day, Every Hour" lists no less than 14 representatives with 17 phone numbers in New England and the South advertising emergency service around the clock and immediate attention to your needs. Only thing they don't mention is what they sell.

► Anderson & Cairns, Inc., N. Y. ad agency, came in for four top awards recently at a Cleveland, O., Art Directors Luncheon for ads for client Dobeckmun Div. Dow Chemical Co. Three were on Lurex metallic yarn and one on "Zip Tape" of this company.

► A textile magazine from Bucharest, Romania, gets to us, even though it is addressed to "Peachtree, Ga." So you see, TI must be well known. So you all write and Keep Georgia Green. Keep sending the money.

Signs

On a desk—"Think or Thwim"; on another desk—"We'd like to help you out. Which way did you come in?"; in restaurant—"We made a deal with the bank. They serve no food and we cash no checks"; at Maggie's Restaurant, Phila.—"No parking problem here. Park your car in Maggie's rear"; in Chicago restaurant—"Half Baked Chicken $1.00" (How much to get one fully cooked?); in Chicago book store—"Giant Book Sales" (and all the books were little ones); on Atlanta

(Continued on page 165)

DURAMOLD SHUTTLES

Last 3 times as long as wood

DURAMOLD—most versatile and strongest molded plastic shuttles on the market

Rugged Duramold Shuttles are manufactured from a single solid, uniform piece of Westinghouse Micarta, remarkably strong, grainless molded plastic, composed of laminated twill fabric impregnated with a phenolic resin, which provides greatest unidirectional strength.

You will get greatly increased shuttle life and lower maintenance costs when you use Duramold Shuttles because the engineering skill of Southern Shuttles Division has taken this superior material and produced the strongest shuttle ever made.

The method of molding and manufacture of Duramold Shuttles permits much greater versatility of construction, such as tip location, eye location, chamber lengths, shuttle widths, etc.

Vastly improved material strength reduces premature failures, prevents splitting and splintering. In fact, the surface becomes smoother with use, thereby reducing friction.

Denser material allows more positive seating of the shuttle parts, reducing the possibility of loosening and rocking to a minimum.

Extension of the tough side wall laminates all the way to the tip greatly increases the strength of this section. Wall sections are thicker for greater strength, and the corners at both ends of the chamber are reinforced. Macerated end blocks are molded into the shuttle to provide flexibility for absorbing shock at these points.

Take advantage of the tremendous savings possible in your weaving room costs with Duramold Shuttles.

Other Plants and Offices: Granby, Quebec, Canada—Lawrence, Mass.—Greensboro, N.C.—Atlanta, Ga.—Textile Supply Co., Dallas, Texas—Albert R. Breen, Chicago, Ill.

Stehedco
STEEL HEDDLE MFG. CO.
PHILADELPHIA 32, PA.
SOUTHERN SHUTTLE DIV.
GREENVILLE, S.C.
Southern

9-5-56

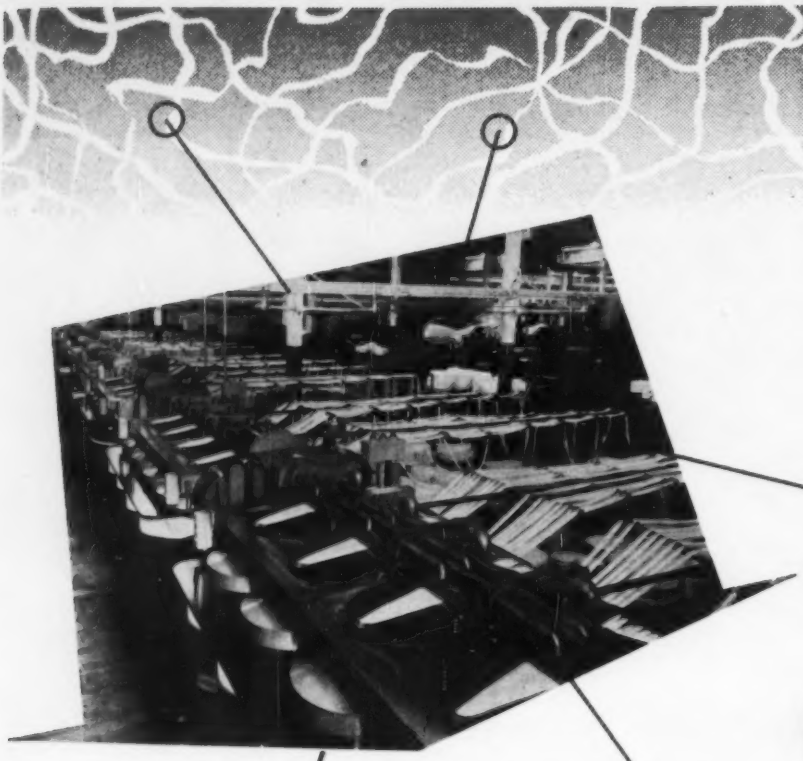
TEMPERED

QUALITY Stehedco CONTROL

STEHIDE

World's largest manufacturer of all type Shuttles

Comparison made them famous



Looking for Brand New Drawing? Ideal has it!

The New Ideal Drawing Frame is a brand new frame with valuable exclusive features. We think it is the best on the market. All we ask is the opportunity to discuss it and demonstrate it to you before you purchase any new drawing.

HIGH SPEED 400 feet a minute is the normal sustained operating speed of this new frame under actual mill operating conditions. Every part of this machine is built for safe, smooth, and continuous operation at this speed.

HIGH QUALITY SLIVER Ideal equipment has met the highest standards of strength and uniformity. Exclusive compensating rolls automatically even out thick and thin places in the sliver. Ideal's exclusive Vacuum System* eliminates slubs and gently sucks out dirt, trash and non-spinnable fibers.

LOW OPERATING COSTS The New Ideal Drawing Frame runs smoothly and quietly at high speeds with a minimum of adjustments and reconditioning. Every part is easily visible and accessible. Compact construction saves floor space. And the initial cost is right. The principles embodied in this frame have been proven on millions of pounds of sliver. Let's discuss this complete New Ideal Drawing Frame at your earliest convenience.

*Patent Applied for

Ideal Industries, Inc.
Bessemer City, N. C.

THE ALDRICH-LUMMUS FIBER BLENDING SYSTEM

MULTIPLE BALE BLENDING

Multiple-Bale Blending of large lots of cotton is a solution for many current problems. If every square foot of picker lap contains fibers from 2000 bales of cotton, yarn will be more uniform, and stronger. Such blending assures absolute uniformity in dyeing the yarn so that streaks are completely avoided.

Multiple-Bale Blending can not improve the cotton, but can improve the yarn by eliminating the variability in the cotton. Every year this variability gets worse, as more cotton is harvested instead of picked by hand, and the consequent overworking and overdrying and harsh lint cleaning at the gin bring down the spinning quality.

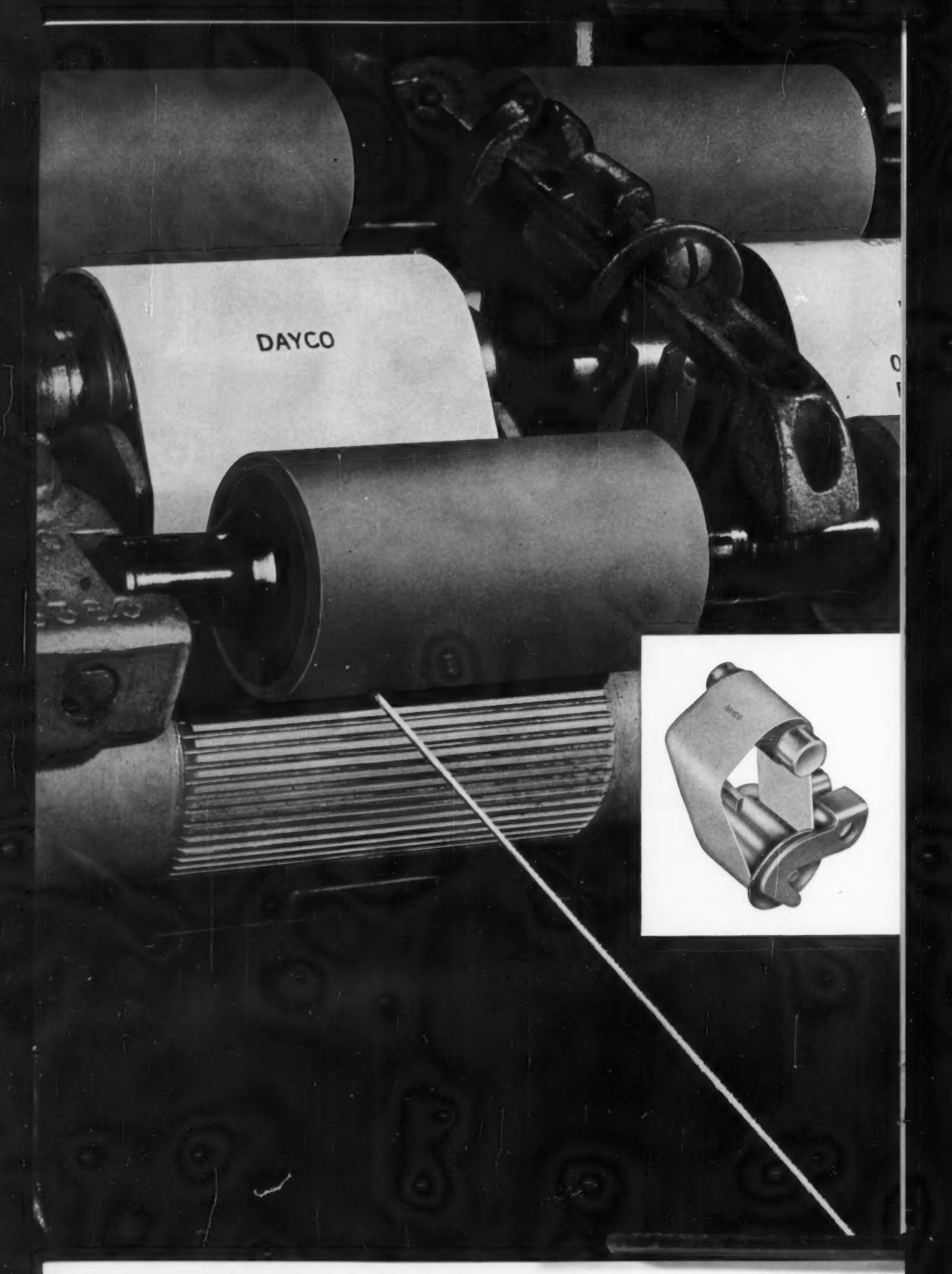
Just as a chain is no stronger than its weakest link, yarn is no stronger than the weakest places in a skein, and the uniform blending of a large number of bales can bring up the average breaking strength by reducing the number of weak places.

Aldrich Machine Works pioneered the Multiple-Bale Blending System 25 years ago for colored cotton mills to make heather blends of absolutely uniform shade. This system today can assure uniformity in the most variable stocks.

The Aldrich-Lummus Fiber Blending System is widely used in woolen mills as well as cotton mills, and invariably guarantees perfect uniformity of any number of stocks which it may be desirable to mix.

AldricH MachinE WorkS

Greenwood, South Carolina


DAYCO

Dayco's Combination of Cots and Embossed Design Aprons

Increases Yarn Quality 10%

A DAYCO EXCLUSIVE, Embossed Design Aprons are the first basically new design in over 20 years. Embossing the inside surface greatly reduces the coefficient of friction . . . cuts apron drag in half. That's why tests show no evidence of apron chatter or tucks forming ahead of the nose bar.

IT COSTS NO MORE to use the most advanced apron on the market, today. Yet you'll improve yarn quality 10% and reduce waste collecting at the nose bar by 50%. That's premium performance at a regular price.

PRODUCTION IMPROVES with faster Monday-morning start-ups due to the fact that fibers won't adhere to Dayco Cots and Embossed Design Aprons. Here's a drafting combination that's unaffected by lubricants or fiber oils and one that stays dry even when temperature and humidity begin to climb!

LONGER LASTING Dayco Aprons won't curl, stretch, or take a permanent set. Nor will Dayco cots pit, groove, or become glazed in the hardest service. This long wearing combination saves you added expense and nuisance of unnecessary replacements.

FOR GREATER OUTPUT of fine quality yarn, equip your frames with the fast starting combination of Dayco Cots and Dayco Embossed Designed Aprons.

Order from your Dayco representative the next time he calls or write the Dayton Rubber Company, Textile Division, 401 S. C. National Bank Building, Greenville, South Carolina

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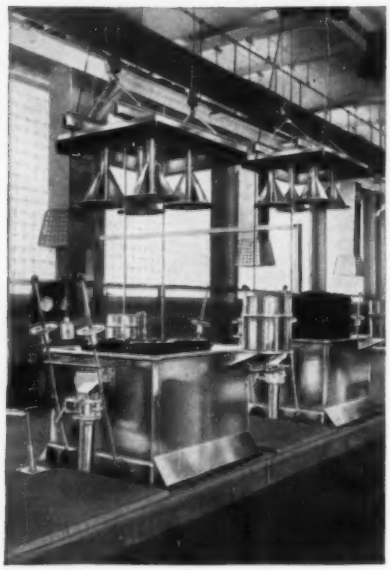
Dayton Rubber

Dayco and Thorobred Textile Products For Better Spinning and Weaving

OVERSEAS PLANT: THE DAYTON RUBBER CO., LTD., DUNDEE, SCOTLAND

Stainless Steel Means ECONOMY

FOR MAXIMUM CORROSION-RESISTANCE and reduction of radiation loss this top dyeing machine is made from stainless steel, Type 316, by William Allen Sons Company, Worcester, Massachusetts. This equipment is easy-to-clean and does not deteriorate from daily contact with dye-bath chemicals. Units are equipped with vapor-tight covers to prevent steam loss, a factor made possible by non-corroding stainless.



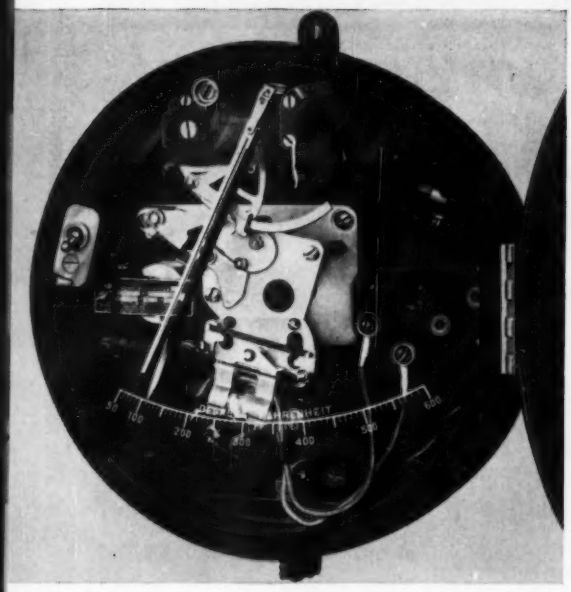
Textile equipment fabricated from Republic ENDURO® Stainless Steel lasts and lasts. It produces immediate savings in maintenance and cleaning costs. Produces long-range savings in extended equipment life.

ENDURO stubbornly resists rust and corrosion. It is easy to clean and keep clean. It is solid stainless steel with no applied surface or coating to crack, chip, flake, or peel.

Flexibility is still another advantage of ENDURO-made equipment. You can use the same equipment for dyeing, rinsing, or bleaching. Easy-clean qualities make possible quick color changes so that small runs can be processed economically. It does not react with dye-bath chemicals. And because ENDURO does not absorb these chemicals, considerably smaller quantities are required to maintain necessary concentrations.

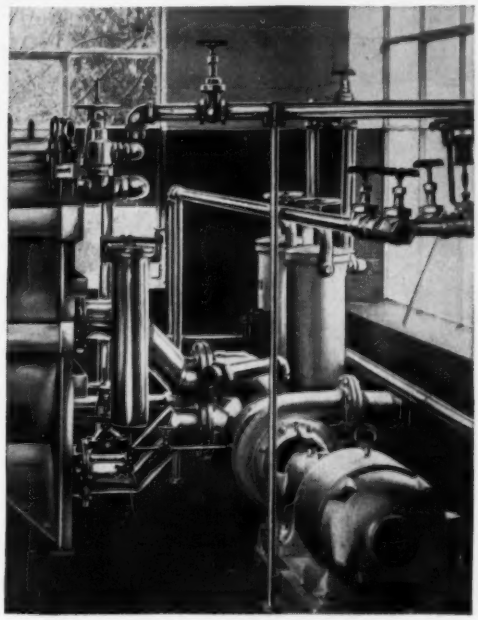
Your equipment supplier will give you more economical reasons for using equipment fabricated from Republic ENDURO Stainless Steel—the metal that brings you the two most wanted features in dyeing and bleaching equipment: true dyed colors . . . pure bleached whites. Contact him, or send us the coupon.

This example of the advantages of stainless steel is brought to you by Republic Steel in behalf of the stainless steel equipment manufacturers and the Republic Stainless Steel distributors—your local steel service centers.



EXTENDED OPERATING LIFE of precision textile instruments exposed to corrosive atmospheres is made possible by the use of stainless steel for pointers, levers, cams, and pawls. This electric control thermometer is made by Brown Instrument Company, Philadelphia. Apply the high physical properties and corrosion-resistance of Free-Machining ENDURO Stainless Steel Bars to your textile machine parts. Two types, A.I.S.I. 416 and 430-F are fully 90% as machinable as Bessemer Screw Stock.

TO KEEP PIPE REPLACEMENT COSTS DOWN this mill installed Republic ELECTRUNITE® ENDURO Stainless Steel Pipe. It carries dyeing solutions without danger of contamination. It stubbornly resists rust and corrosion. Resists the corrosive action of most acids and alkalies. This quality pipe is an inexpensive investment in long-range economy. Send coupon for 60-page brochure.



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TC-Hydro is a dry, white, free flowing, crystalline powder of uniform size and structure. It is dust free, assuring highest stability and uniformity.

As Miners Of Sulfur Bearing Ores— We have utilized our basic position in Sulfur Chemistry to produce another product of highest purity and quality for use in the Textile Industry.

When You Need It— Our production is located in the heart of the Southern Textile Industry which permits us to render over-night delivery service to most Southern points—also small lot shipments are available from centrally located warehouses.

Phone, Wire or Write for literature and test samples if desired.

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617-29 Grant Building, Atlanta, Georgia

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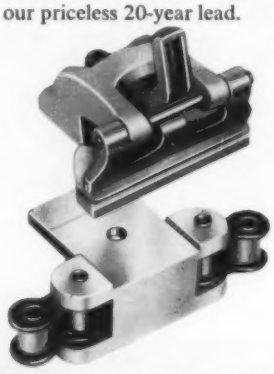
Roller Type Tenter Clips

...always 20 years ahead!

Our #11 Roller Type Tenter Clip universally sets the standards for roller clip performance. Engineered for every type of operation, equipment and fabric, it is precise in performance up to 250 ypm, has exceptionally long life at high speeds. We originated, patented and introduced the basic design 20 years ago — and constantly improve both design and materials to maintain our priceless 20-year lead.



Our Two-Piece Roller Type Tenter Clip is a typical M&W innovation — only clip of its type available in two-piece construction to eliminate down time, greatly reduce repair costs. A single socket-head cap screw and lock washer rigidly hold the two sections together. Top section can be promptly removed (and replaced) in case of damage or wear, leaving bottom of chain in place on frame — ready for immediate resumption of operation.

M&W

Don't Substitute . . .

TAKE FIRST CHOICE!

Send for complete data . . . no obligation

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New Low Cost TEXTILE PULLEY

adjusts speeds while running!

REEVES® *vari-spin drive*

new belt Field-tested, specifically designed 2″ rib belt. Flexible, high resistance to heat, oil and moisture. Long life under continuous rated load.

new base Low cost. Rugged welded steel. Minimum height. Easily adjustable.

• Speed settings in 2:1 range are accurately made in seconds —*while the frame is operating.*

A low cost unit, the compact 975-T features REEVES' exclusive "close grooving" for positive lubrication . . . free sliding shifting action.

Contact your nearest REEVES or RELIANCE representative, or write for complete details in Bulletin T37-G586-1.

for a wider speed range, 3 to 1, fixed center drive, write also for details on REEVES No. 16-10 Vari-Spin Drive . . . through 15 hp. Ask for Bulletin T37A-G561-1.

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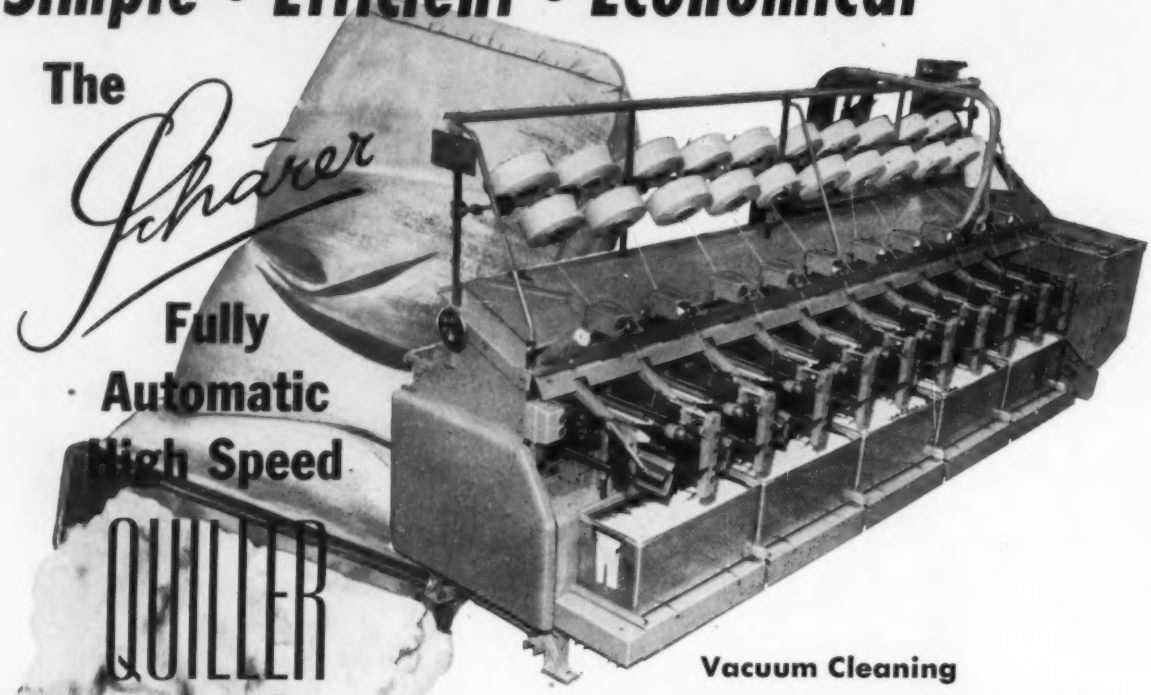
Division of **RELIANCE** ELECTRIC AND ENGINEERING CO.
Columbus, Indiana

Simple • Efficient • Economical

The Scharer Fully Automatic High Speed QUILLER



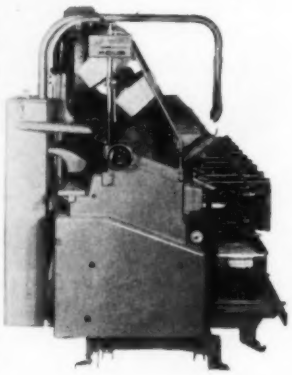
Simple to Operate — Any average operator can learn to operate and maintain the Scharer Quiller in a few hours. The Scharer machine is outstanding for simplicity of design with all working parts easily accessible.

Efficient — The exclusive Scharer nose tensioning device automatically produces even bobbins with more yarn per package. Full bobbins are carefully and accurately laid in boxes, ready for use at the looms. The Scharer Automatic Loading Device handles quills gently and prolongs their life.

Economical Operation — Records show far less than average down-time and consequently more hours of uninterrupted production. One 4 HP motor with variable speed control runs the entire frame at speeds up to 11,000 RPM.

Vacuum Cleaning

Twin blowers, at yarn level, blow dust and fly directly into a vacuum collector system. Far superior to overhead blowers in keeping yarn and winders clean.



The simplicity, efficiency, and economy of the Scharer Fully Automatic High Speed Quiller deserve your close investigation. Let us send you full information.

Ample stocks of replacement parts carried in our Spartanburg Warehouse.

Manufactured By: Scharer Textile Machine Works, Erlenbach/Zurich, Switzerland

"Winding Machines Since 1880"

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The Esso Lubrication Engineer brings to your shop the vast experience and facilities of Esso laboratories and research—as a customer service.

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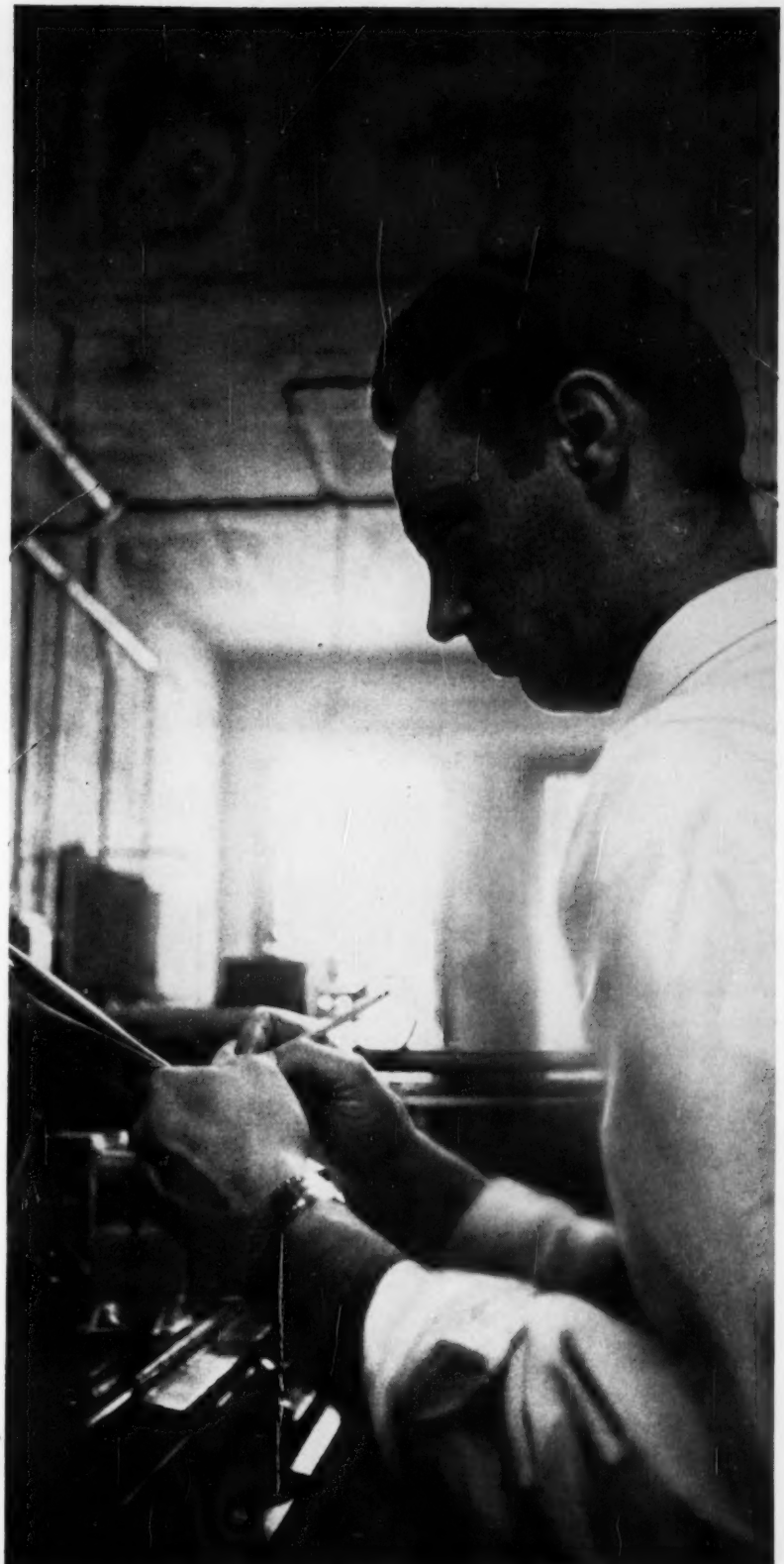
Let an Esso Lubrication Engineer help *you* cut maintenance costs. For more information, contact your nearest Esso office, or write to: Esso Standard Oil Company, 15 West 51st Street, New York 19, N.Y.



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LESS OIL IS NEEDED.
TRAVELER DISTRIBUTES OIL.
OIL FLOWS TO ANNULAR RESERVOIR WITHIN THE RING, THEN IS DRAWN BY CAPILLARY ACTION THROUGH SEAMS.

New..."M" type HERR Conical Ring

better lubrication with less oil

SEAM LUBRICATION. A new idea . . . utilizes the principle of capillary attraction to provide more uniform lubrication than has been possible in the past. It is the outstanding feature of the new "M" type ring.

SEVERAL YEARS EXPERIENCE IN SOME OF THE LARGEST TEXTILE PLANTS HAVE ESTABLISHED THE BENEFITS OF THIS RING.

1. **LESS OIL IS USED IN THIS NEW "M" TYPE RING** because no oil is wasted. It all goes to the bearing surfaces of the ring through the seams.
2. **TRAVELERS LAST LONGER.** As a matter of experience in mills which have been using "M" rings for the past three years, the uniformity of lubrication increases traveler life.
3. **RINGS LAST YEARS LONGER.** High speed operation for years has established the superiority of the new design.
4. **CLEANER YARN.** With better oil distribution and no leakage, mills are getting cleaner yarns.
5. **FASTER OPERATION.** Speed-up is possible without extra wear to ring and traveler. The traveler receives oil from the lubricating seams over the complete bearing surfaces of the ring.
6. **REDUCES YARN BREAKAGE.** As in all Herr Conical Rings, tension is automatically adjusted by the action of the traveler and conical design of the ring.

Write today — get facts that will make new profits possible.

The 5½" diameter 4 3/64" face Herr Conical Ring requires only one oil cup.

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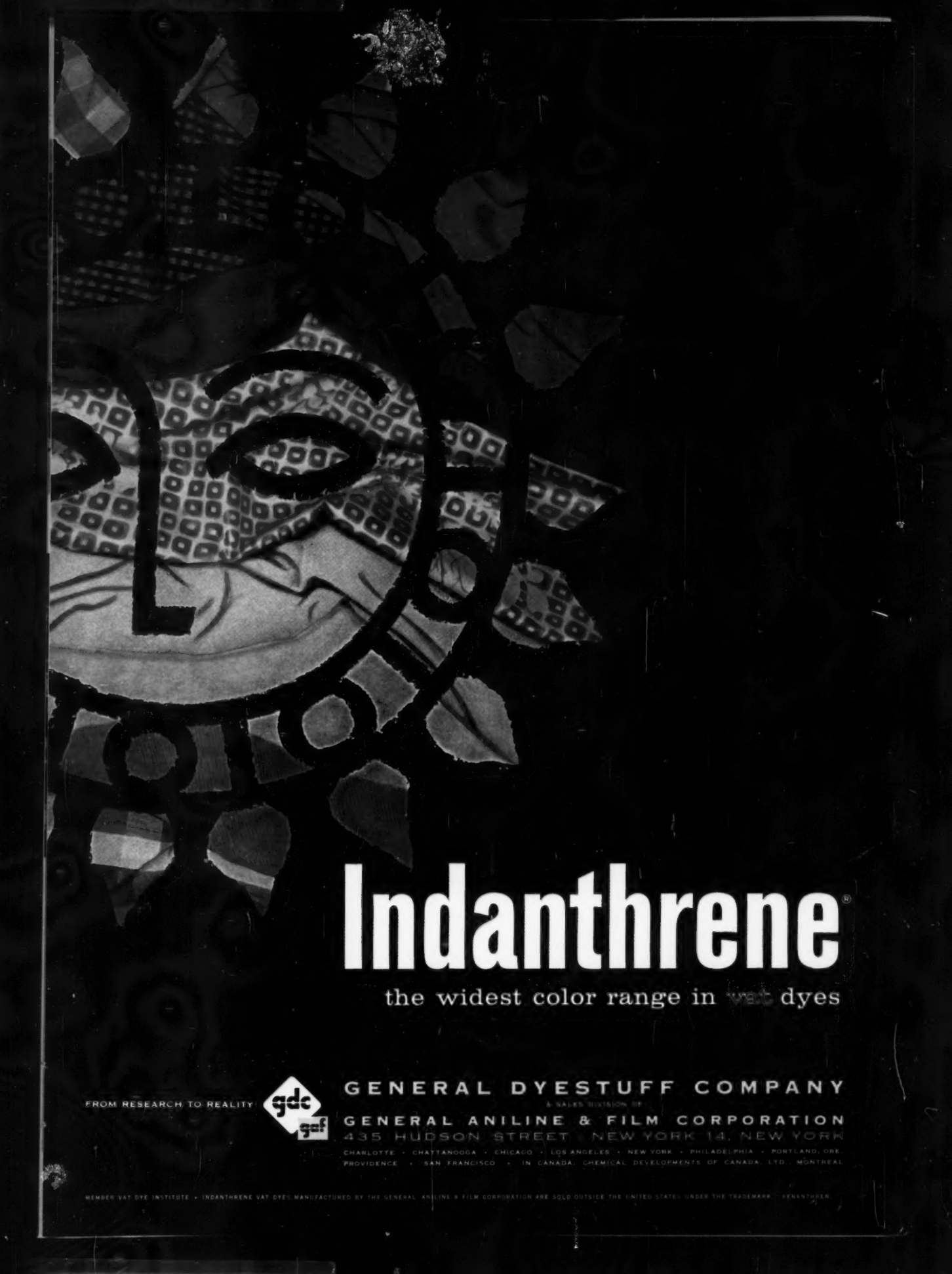
FOR SPINNING AND TWISTING WORSTED, WOOLEN, RAYON, NYLON, ORLON, FIBERGLASS AND BLENDED YARNS OF ALL TYPES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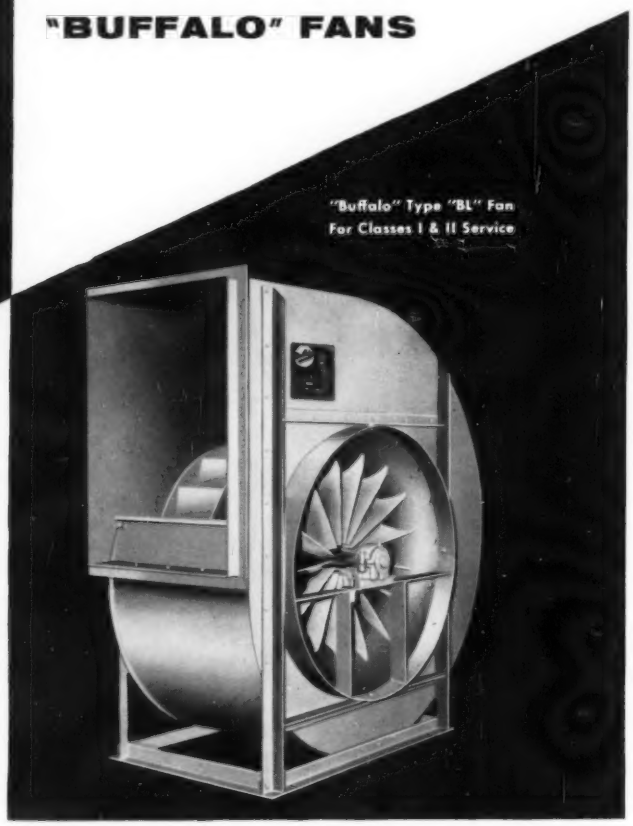
MEMBER VAT DYE INSTITUTE · INDANTHRENE VAT DYES MANUFACTURED BY THE GENERAL ANILINE & FILM CORPORATION ARE SOLD OUTSIDE THE UNITED STATES UNDER THE TRADEMARK "HEXANTHREN"

"Buffalo" Type "BLH" Fan
For Classes III & IV Service

MINIMUM MAINTENANCE, LONG LIFE ASSURED BY THESE HEAVY-DUTY "BUFFALO" FANS


"Buffalo" Type "BL" Fan
For Classes I & II Service

The high performance characteristics of these two outstanding "Buffalo" Fans has resulted in their widespread use in the field of industrial air handling. In addition to offering peak-efficiency operation in their respective classes, both the "BL" and the "BLH" bring you a bonus economy factor of *maintenance reduced to an absolute minimum* throughout a long, productive life. This minimum maintenance factor is directly due to unusually rugged "Buffalo" construction features such as:

HOUSINGS — The heavy gauge sides and scroll are of all-welded construction. Heavy structural steel bracing provides housing stiffness and rigid bearing support. Flanged inlets and outlets give added support.

SHAFTS — Hot-rolled or forged shafts are ground to close tolerances for perfect wheel and bearing fit.

WHEELS — Sturdy backward-curved blades are welded to the die-formed shroud and welded or riveted to the solid backplate. Heavy hubs assure permanent shaft alignment. For higher tip speeds, reinforcing rings provide necessary wheel rigidity.

BEARINGS — Self-aligning anti-friction bearings are designed for continuous operation at maximum tip speed. Horizontally split, ring-oiled, self-aligning, babbitted sleeve bearings are also available.

For full details, contact your "Buffalo" representative, or write for Bulletins F-102 and F-200.

Minimum maintenance is assured by the famous "Q" Factor — the built-in QUALITY that provides trouble-free satisfaction and long life in every "Buffalo" product.

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VENTILATING AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING FORCED DRAFT COOLING HEATING PRESSURE BLOWING

News IN BRIEF

Textile Advisory Council Proposed. Creation by the Department of Commerce of a textile industry advisory council to help the industry and the Administration keep in touch was proposed at a recent Senate Interstate and Foreign Commerce subcommittee meeting by Robert C. Jackson, executive vice-president of the American Cotton Manufacturers Institute.

Mr. Jackson's proposal was offered after he objected to a suggestion by Senator John O. Pastore (D., R. I.) that a government agency be established to keep the executive branch informed of the damage done to the domestic textile industry by imports. The textile industry needs less, not more, government control and interference, Mr. Jackson emphasized.

The Business Game. Georgia Tech will offer a laboratory course in management decision making on January 21-23, called "The Business Game." The Game is "business simulation," analagous to the war games of the armed services, in which major economic concepts are built into a digital computer, complete with boom periods and recessions. Players compete with each other and with the economy built into the machine. Registration for the three-day program, including luncheons and supplies, is $125.00. For details, contact: Director, Short Courses and Conferences, Georgia Institute of Technology, Atlanta 13, Ga.

Machine Combines Stretch Nylon, Other Yarns. A patent for a device to combine wool, cotton, and man-made fiber yarns with stretch nylon yarn has been granted to Carl W. Harris and Ernest G. Hester of McMinnville, Tenn.; the inventors have assigned the patent to Rockford Textile Mills, Inc. Yarn produced on the machine is claimed to be substantially kink-free, and suitable for various types of woven and knitted fabrics.

Used Machinery Will Haunt You. It is usually impossible to get rid of a machine by selling it, the National Association of Hosiery Manufacturers warns its members. Such machinery almost always goes to a company forced to maintain its existence by an ability to

undersell competition — including the company from which it got the used machinery in the first place. When you are about to sell a machine, suggests NAHM, ask yourself how many times you'll have to buy back through lower prices for your own product.

Canadian Wool Demand Down. Canadian production of wool cloth during the first half of 1958 was 3.93 million yards, down 0.86 million yards from the same period of last year, reports the Canadian Woollen & Knit Goods Manufacturers Association. However, volume of imports declined from 5.19 million yards to 4.19 million yards during the same period, upping the domestic mills' share of the market slightly, from 48.0% to 48.4%. Canada's wool textile industry employed 11,520 in September, 1958, compared with an average of 13,500 in 1957.

NCTMA to Have Associate Members. Effective January 1, a new plan of associate membership in the North Carolina Textile Manufacturers Association is available to individuals who sell machinery, supplies, and services to the mills. Only active and associate members will be invited to attend future NCTMA conventions and meetings.

Over-Drying Cuts Cotton Quality. That over-drying at the gin cuts cotton quality was again demonstrated by USDA research. Excessive heat was found to make fibers brittle, resulting in increased nep counts, poorer yarn appearance, and some reduction in fabric abrasion resistance.

Red China Cotton Production Soars. Japanese textile men visiting the U. S. warn that raw cotton production in Communist China has increased to about 16 million bales in 1958, and plans are to produce 24 million bales in 1959—

making Red China the world's largest cotton grower. The Japanese visitors noted that Japan buys all her cotton from the U. S. Implication: If the U. S. doesn't permit entry of more Japanese cotton textiles, Japan will start buying cotton from Communist China.

See the 1959 Beechcraft models

the new **SUPER 18**

the new **TWIN BONANZA**

the new **TRAVEL AIR**

the new **BONANZA**

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Southern Airways Company

BEECHCRAFT—AIRFLEET OF THE TEXTILE INDUSTRY

Gaston Tech in New Quarters. Gaston Technical Institute, Gastonia, N. C., a branch of N. C. State College, has moved to new quarters on West Franklin Ave. donated by Firestone Textiles.

Add Knitting Fixer Courses. Courses in knitting machine fixing have been added to the curriculum at Guilford County Industrial Education Center, Jamestown, N. C.

Anti-Rheumatism Blanket. An Austrian wool manufacturer is manufacturing bed covers which are claimed to afford protection from rheumatism. The covers are made of two waffle-jersey layers with a flat fabric between. The arrangement is claimed to give warmth without interfering with ventilation—said to be just the thing for rheumatic sleepers.

"Urgent" Cotton Research. The cotton industry's Subcommittee on Quality Research has placed a tag of "utmost urgency" on the need for means to evaluate the quality of raw cotton and relate it to manufacturing performance. Research where emphasis should be placed, according to the Subcommittee: Determining the percentage of short fibers in cotton, and automatic control of seed cotton drying at the gin.

Growth of Nonwovens. National Cotton Council passes on the following trade estimates of past, present, and future production of nonwoven fabrics:

1950—8-10 million lb
1953—25-30 million lb
1955—45-50 million lb
1956—80-90 million lb
1958—80-90 million lb
1961 (projected)—125-175 million lb

Calls for Across-the-Board Quotas. Quotas on imports of cotton textiles from all countries to avoid charges of discrimination and afford relief to the domestic industry are urged by W. Ray Bell, president of the Association of Cotton Textile Merchants of New York.

Finns to Promote Cotton. The Finnish Cotton Institute has signed an agreement with Cotton Council International for a cooperative cotton promotion program. Finland is the eleventh country to initiate such a program, of which the U. S. Department of Agriculture pays half.

What Is "Textile"? The Textile Institute (England) has suggested the following definition of "textile": 1. A fibrous material suitable

for being spun and made into a yarn. 2. An assembly of interlacing yarns or fibers in the form of woven, knitted, or other structures.

Others Have Import Problems. Officials of Allis-Chalmers Mfg. Co. have severely criticized the board of directors of Tennessee Valley Authority for "spending more than $2½ million in taxpayers money for the purchase of three generators from a [Swiss] company." Allis-Chalmers, which was the lowest American bidder, notes that

Love Calls for $1.25 Minimum Wage

■ AN INCREASE in the present Federal minimum wage of $1.00 an hour to a base of $1.25, possibly in two steps, is advocated by J. Spencer Love, chairman and president of Burlington Industries, largest mill group in the textile industry.

According to Mr. Love, competitive conditions in the industry "are such that a general wage increase cannot be made at this time, because all producers would not follow any pattern, even if set by a few leaders." This situation, he added, would be untenable, since it would put manufacturing costs of those giving a raise far out of line with those who didn't, and "there has been too much of this in the past."

He pointed out that, unlike the situation in most other industries, no one company comprises over four or five per cent of the total industry, and that there are literally thousands of textile firms competing for business.

"Our industry is operating today on much too narrow a profit margin to permit any producer to risk being seriously out of line in competitive costs," he said. Therefore the only equitable and constructive present approach to higher wages in the textile industry would be through an increase in the Federal minimum—an approach which has worked effectively in the past.

A higher minimum would require upward adjustments in textile pay classifications "all along the line," he stated, but added that this "would be desirable if accompanied by a general uplifting of the over-all economy of the industry."

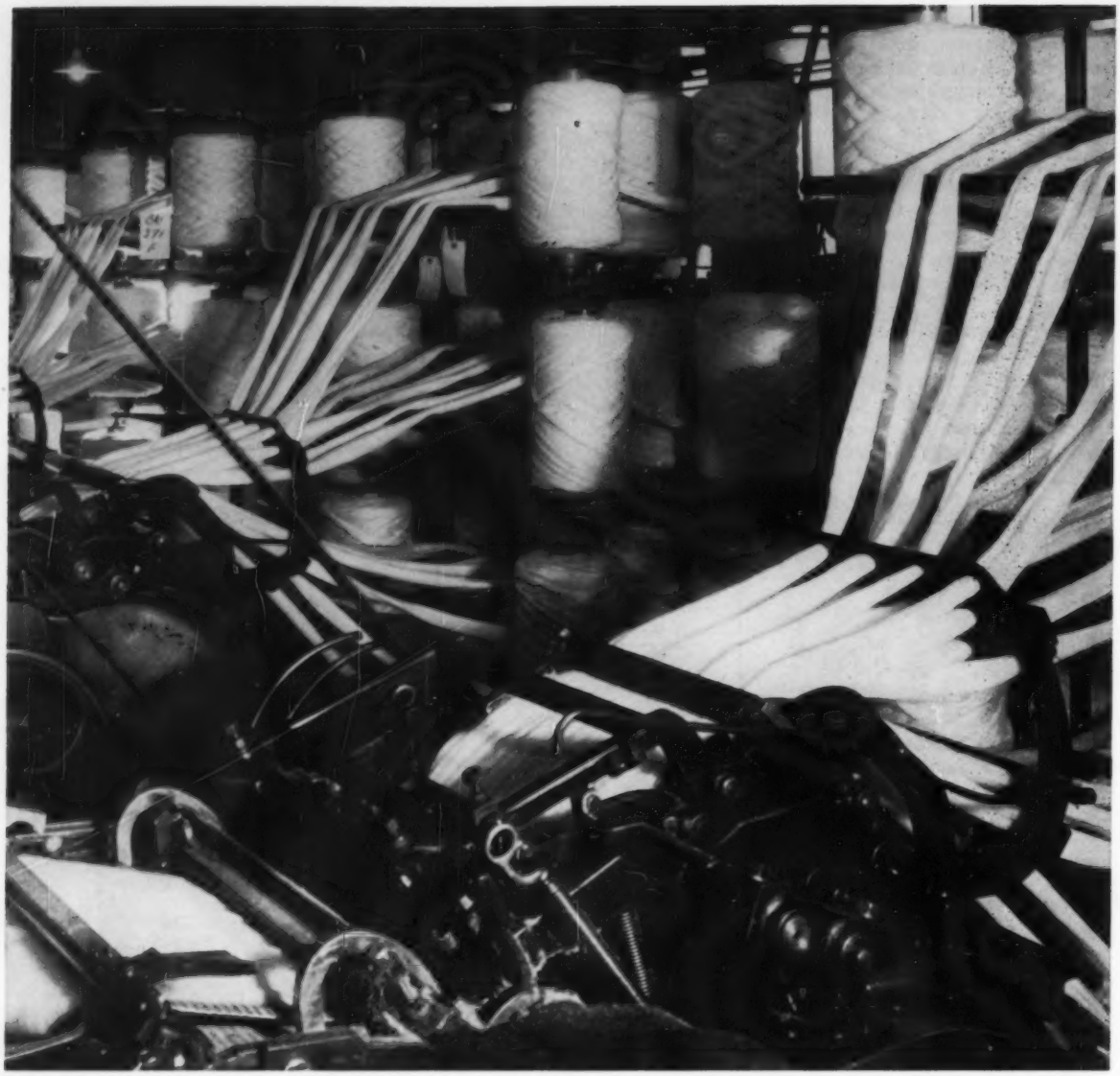
A major danger in an increase in the minimum to $1.25 is that it would further widen the enormous competitive advantage held by foreign producers, Mr. Love pointed out, and realistic quotas on imports would be even more necessary to protect the jobs of American textile employees. It would also have some unfavorable effect on exports.

ROBERT T. STEVENS, president of J. P. Stevens & Co., Inc., commenting on Mr. Love's statement, said:

"I am in favor of a general wage increase in the textile industry. It would be preferable if this could be brought about by voluntary action of individual mills. Experience has taught, however, that many would not join in such a move. In our highly competitive industry this places the mills which do make a wage increase in a position of serious disadvantage.

"Since minimum wages are already set by Federal law, I agree that the soundest way to accomplish a general increase for textile employees is to raise the base or minimum. This should result in increased wages for all textile workers.

"If this were done, it should certainly be accompanied by more effective restrictions of textile imports from low-wage foreign countries which have such an adverse effect upon our industry."



Promised feat . . . or delivered feet?

The real measure of success in textile lubrication lies in *feet* of textiles produced—not *promised* feats of performance. It's the maximum yardage actually realized that counts. For over 70 years Standard Oil lubricants have been *first* in popularity with southern textile industry . . . a popularity that has been built on the solid foundation of production *results*.

Constant tests and quality-controls throughout the manufacturing process assure Standard Oil lubricants with an unvarying high quality. Continuing research in the world's largest facilities for petroleum testing maintains a steady flow of Standard Oil product improvements and new lubrication techniques.

Your Standard Oil lubrication specialist stands ready to give you the full benefit of Standard Oil experience with a lubrication plan tailored to *your* specific requirements.

STANDARD OIL
LUBRICANTS

STANDARD OIL COMPANY
(KENTUCKY)

domestic manufacturers must pay a minimum wage on government contract work, while foreign firms are subject to no such restrictions. In reply, TVA officials deny that the money comes from U. S. taxpayers, since they claim that TVA is supported from its own revenues; and that in any event, of more than $2.1 billion spent by TVA in the last 25 years, only about 0.25% has been spent abroad.

Wool Improvement Discussed. Several roads to increased wool consumption were discussed at the recent Washington meeting of the USDA's Sheep and Wool Research and Marketing Advisory Committee. The Committee noted that wool's "inherent superiority" should be analyzed to enable wool to compete with the synthetics by improvement in the physical characteristics and stability of wool fabrics. Research recommended by the Committee: Studies to develop wash-and-wear wool garments that can be laundered at home without shrinking or losing pleats and creases; evaluation of consumer attitudes and preferences on wool and other fibers; chemical modification of wool; and research on superior strains and breeds of sheep.

What's Wrong With Renegotiation? The Act regulating renegotiation of payments on government contracts is being considered for renewal; National Association of Manufacturers has published a pamphlet outlining the case against renewal. Summary of NAM's case: It discourages efficiency and incentive; factors to be considered in determining excessive profits are vague; the Armed Services rely on renegotiation as a crutch substituting for sound judgment; record-keeping is a chore; and delays in processing cases prevent a contractor from knowing what his profits are for periods as long as four years. Copies of the pamphlet, "What's Wrong With Renegotiation?" are available for 35 cents each from NAM, at 2 E. 48th St., New York 17, N. Y.

Foundation Ups School Aid. Trustees of the J. E. Sirrine Foundation, whose assets now total $1 million, have approved an expanded program of aid to Clemson College School of Textiles. Approved: Increased supplements to income of retired members of the teaching staff; reduced work-loads to improve instruction in certain departments of the school; and provision of additional travel funds for staff members to visit and study South Carolina textile mills.

Wool Core Testing Investigated. Alleged differences in wool core test results are being investigated jointly by U. S. Testing Co. and American Conditioning House, following a recommendation by the U. S. Department of Agriculture.

Textile Seminar for Retail Men. A fourteen-week seminar designed to help the retail executive to understand the economics and functions of the textile industry, to help him to plan more effectively and to educate his staff and cus-

We Are Paying a Processing Tax—Smith

■ DURING my thirty-three years in the textile industry, I know of no governmental action which has been more damaging to the industry in general and to Avondale Mills in particular than the enactment of the processing tax on cotton in the early days of the Roosevelt Administration. This tax amounted to 4.2 cents per pound and was levied on all cotton the mills used. We were of course expected to pass it on to the ultimate consumer, but found it impossible to do so. The tax was declared unconstitutional by the U. S. Supreme Court.

Fortunately for us, we had been able to defer paying the tax for a considerable period and when it was declared unconstitutional, this money reverted in part to us and in part to our customers. Had it not been for this reversion, 1934 and 1935 would have been disastrous years for us.

The present governmental policy which forces us to pay 6 to 8 cents per pound above the world price for our cotton is having the same effect on our industry that the old processing tax had. The only difference is that the present tax is at least 2 cents a pound higher and we have to pay it the minute we buy the cotton instead of 90 days after we consume the cotton, as was true with the old processing tax.

Like the old processing tax, we are supposed to pass the present one on to the ultimate consumer. A quick glance at the operating results for the industry as a whole will prove conclusively that we have been unable to do it.

We believe that the American cotton farmer is entitled to protection from low-wage, foreign competition. We would not complain about paying him the government-supported price provided we were similarly protected. The facts are, though, that the foreign mills can buy cotton grown in Alabama for at least $30 a bale less than this same cotton costs us.

They can then ship cloth made from this cotton back to the United States by paying a meager tariff, which comes nowhere close to offsetting the advantage they have in their labor. They have a net advantage in respect to the purchase price of their cotton.

This is an intolerable situation and, like the old processing tax, I believe it is responsible in very large measure for the present financial difficulties of our industry. —J. Craig Smith, president, Avondale Mills, in *The Avondale Sun.*

#4 of a series:

caprolan®

TEXTURED YARN SEMINAR

NEW YARNS... NEW YARN CARRIERS... NEW OPPORTUNITIES!

Big news in textiles today is the switch to textured filament yarns. In considering this big step forward, you'll want to know all the facts that will make the change-over most profitable for your mill.

FACT: Textured Filament Yarns And Spun Yarns Are Not The Same

This plain fact makes it apparent that your ordinary methods of running spun yarns will need some adaptation for maximum success with the amazing new textured filament yarns. Certain areas will require simple adjustment:

Yarn Carriers, for Instance

The metal yarn carriers you have probably been using for spun yarns may cause problems with the new filament yarns. For one thing, the soldered joints, which have no noticeable effect on spun yarn, can damage filament yarns, creating streaks in the finished fabric.

Try This Easy Solution... and Save Money!

Seamless plastic yarn carriers which stay clean—and don't wear—assure smooth running filament yarn. What's more, they cost less!

The enlightened use of the new, textured filament yarns is opening up more and more new fields of opportunity today. We are eager for you to get the best possible results when adapting Textured Caprolan* to your product lines. Our technical service, end-use development and fiber application laboratory staffs are always available to help you and to answer any questions. Call us any time.

*Trade Mark—Allied Chemical's polyamide fiber

Allied Chemical

Fiber Sales and Service *National Aniline Division*
261 Madison Avenue, New York 16, N. Y.

tomers, is being sponsored by the New York Board of Trade's Textile Section, in cooperation with the National Retail Merchants Association and the New York Board of Education. The seminar will meet Tuesday evenings, beginning January 20, at New York's High School of Fashion Industries.

Knitting Show South? Trade sources report that sponsors of the Knitting Arts Exhibition are considering a move from Atlantic City to the South after the show

scheduled for May 4-8, 1959. If the move is made, it would most likely be to a North Carolina city, with Winston-Salem reported to have the inside track at present.

Machine Design Competition. A machine design competition with awards totaling $50,000 for the best papers describing the use and advantages of arc welding in the design and construction of a machine or machine component, including textile machinery, has

been announced by the James F. Lincoln Arc Welding Foundation. To qualify, the machine or component must have been designed or redesigned and manufactured within the period July 1, 1957, to July 20, 1959; papers must be mailed by the latter date. Details are available from the Foundation, at P. O. Box 3035, Cleveland 17, O.

Hosiery Shipments Soar. The women's hosiery industry shipped 13,944,000 dozens in the third quarter of 1958, a gain of 500,000 dozens over the same period of 1957, the National Association of Hosiery Manufacturers reports.

Farm-Retail Cotton Price Spreads Steady. USDA researchers have found that the spread between the price the farmer re-

ceives for his cotton and the price the consumer pays for the same cotton in manufactured form has remained pretty steady since 1947. The spread remains at about $1.80.

Merchandising Notes

Anderson & Cairn's creative director, Sherman Rogers, told a recent meeting of the New York alumni chapter of Phi Psi textile fraternity that many textile advertisers are spending millions of dollars a year talking to themselves. "Too many textile ads have been created and approved by advertising management people with themselves in mind and not their customers," the New York advertising agency executive declared.

Burlington Hosiery Co. has added a "Duo Knit Insulator" sock to its Jerks Socks line. Two separate layers are interlocked to give thermal insulation without weight.

Chicopee Mfg. Corp. has introduced a nonwoven work-shirt collar interlining fabric of rayon; it is the first fabric of its type to be certified washable by the American Institute of Laundering.

Collins & Aikman Corp. have been granted U. S. Patent 2,857,652, covering the manufacture of their mink-simulating fabric, "Wink." The fabric is claimed to give a three dimensional effect similar to that of the real mink, which has a lower underpelt and longer, silkier guard hairs. A blend of acrylic fiber and nylon is used in the fabric.

Commercial Factors Corp.'s assistant vice-president, Carl T. Erickson, reports that the new fur-like fabrics, especially those of Orlon blended with dynel, have made the "cheap fur coat" passé. "There is no doubt," he said, "about consumer acceptance of these new fabrics. They are immensely popular and are fast becoming a vogue."

Dow Chemical Co.'s experimental fiber, temporarily called "957" (see TEXTILE INDUSTRIES for July, 1958, p. 35), is used as a wall covering material in a research house at South Bend, Ind. The fiber, described as a "thin, narrow tape," and similar in some ways to saran, is being developed for commercial applications.

Fruit of the Loom bobby socks and children's cotton briefs are being test marketed in a sealed, rigid cardboard canister.

Hudson Hosiery Co. has developed a specially treated nylon welt yarn to overcome what it calls "the industry bugaboo of too-tight tops in seamless stockings." The new seamless welt is called "Carefree Top."

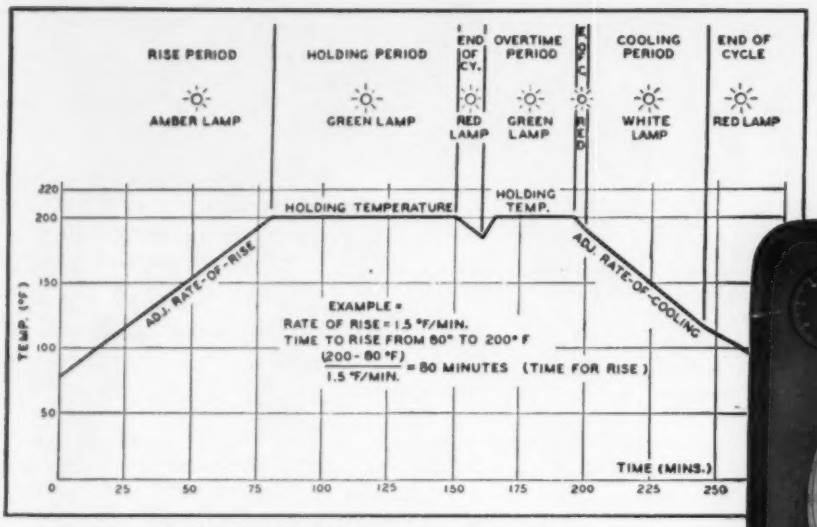
Reeves Brothers' vice-president, Percy R. Meeker, reports that the company has gone for several consecutive months without a single return, claim, or complaint on goods processed under American Standard L22 on performance of rayon and acetate fabrics.

Spinco Fabrics, Inc., a subsidiary of Cone Mills, is offering its Warma-Lined cotton knit goods with urethane foam interlinings laminated to them.

Woolens and Worsteds of America, Inc., has established a "fashion bank" of all types of woolen and worsted garments for the use of national advertisers in costuming models.

No More DYE-BATH SHOCK

for Knitted Fabrics and Piece Goods



Typical Dyeing Schedule for Piece Goods using the new Foxboro Model 40 C-HC CycleLog Controller

. . . Model 40 C-HC CycleLog*

Automatically Controls Rate of Cooling as well as Rate of Rise

NOW YOU CAN PROTECT all your woven fabrics and hosiery from uneven shade, creasing, and crow's-feet caused by too rapid cooling of the goods while hot and plastic. New Model 40 C-HC Controller carries out *every* temperature step in the dyeing schedule—duplicates uniformity in every batch.

Like the widely-used Model 40 C-H CycleLog Controller, the new Model 40 C-HC automatically brings the bath to "the boil" at the desired rate, and holds the dyeing temperature for the required period. In addition, this special new model controls *cooling* . . . gradually lowers bath temperature at the safest rate without waste of time. For complete information, write for Engineering Data Sheet 220-60.

*Trade Mark

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CycleLog Controllers

on the average (farm value, 32 cents; retail cost, $2.12).

Wash-and-Wear Wool? A man's washable all-wool suit, which will also be mothproof and stainproof and have permanent creases, is a thing of the not-too-distant future, claims Gerald Laxer, director of the Wool Bureau's Department of Science and Technology. Basic principles for the development of such a garment are now the subject of Wool Bureau-sponsored research at Harris Research Laboratories.

Japanese Man-Made Fiber Production Climbing. Japan's Ministry of International Trade and Industry predicts that output of man-made fibers in Japan in 1960 will top 1957's production by the following percentages:

Fiber	Production 1957 million lb	Output, 1960 % of 1957
Vinylon	32.5	222
Nylon	48.8	175
Vinylidene chloride	6.5	230
Acrylonitrile	1.3	5,046
Vinyl chloride	4.3	372
Polyester	0	*
TOTAL	93.5	302

*Estimated production: 28 million lb

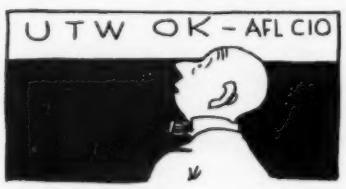
News in Brief

Prices to Stabilize — Erwin. Large, publicly owned companies will provide leadership to the textile industry, leading to increased long-term price stability, predicts William J. Erwin, president of Dan River Mills. For the near future, he sees a slight uptrend in textile prices, but the rapidity with which production can be increased makes any dramatic upsurge unlikely.

Labor-Management News

Union Election Box Score. Employees of these mills rejected the Textile Workers Union of America (AFL-CIO) in recent elections: A. & M. Karagheusian, Inc., Albany, Ga., 71-27 (plus 20 votes challenged by the union); Threads, Inc., Gastonia, N. C., 262-228; Cone Mills Corp., Salisbury, N. C., 329-258. United Textile Workers were overwhelmed at Goodyear Tire & Rubber Co., Cedartown, Ga., 445-290; and at E-Z Mills, Cartersville, Ga., 441-184.

UTW OK Says AFL-CIO. AFL-CIO president George Meany reports that United Textile Workers is being run "in what we feel is a completely satisfactory way." However, the AFL-CIO monitor



appointed when the Senate rackets committee dug up evidence of financial irregularities and mismanagement in UTW's affairs will continue to keep an eye on the union.

TWUA Asks Gera Probe. Textile Workers Union of America (AFL-CIO) has called on Senator John O. Pastore (D., R. I.) to investigate what it calls a case of "financial buccaneering" in the coming liquidation of Gera Fabrics, Inc., Manchester, N. H. TWUA charges that Gera is being axed even though it is a profitable concern.

Film on Strike Violence. A 28-minute sound film, "A Question of Law and Order," designed to help business men gain community understanding and support for effec-

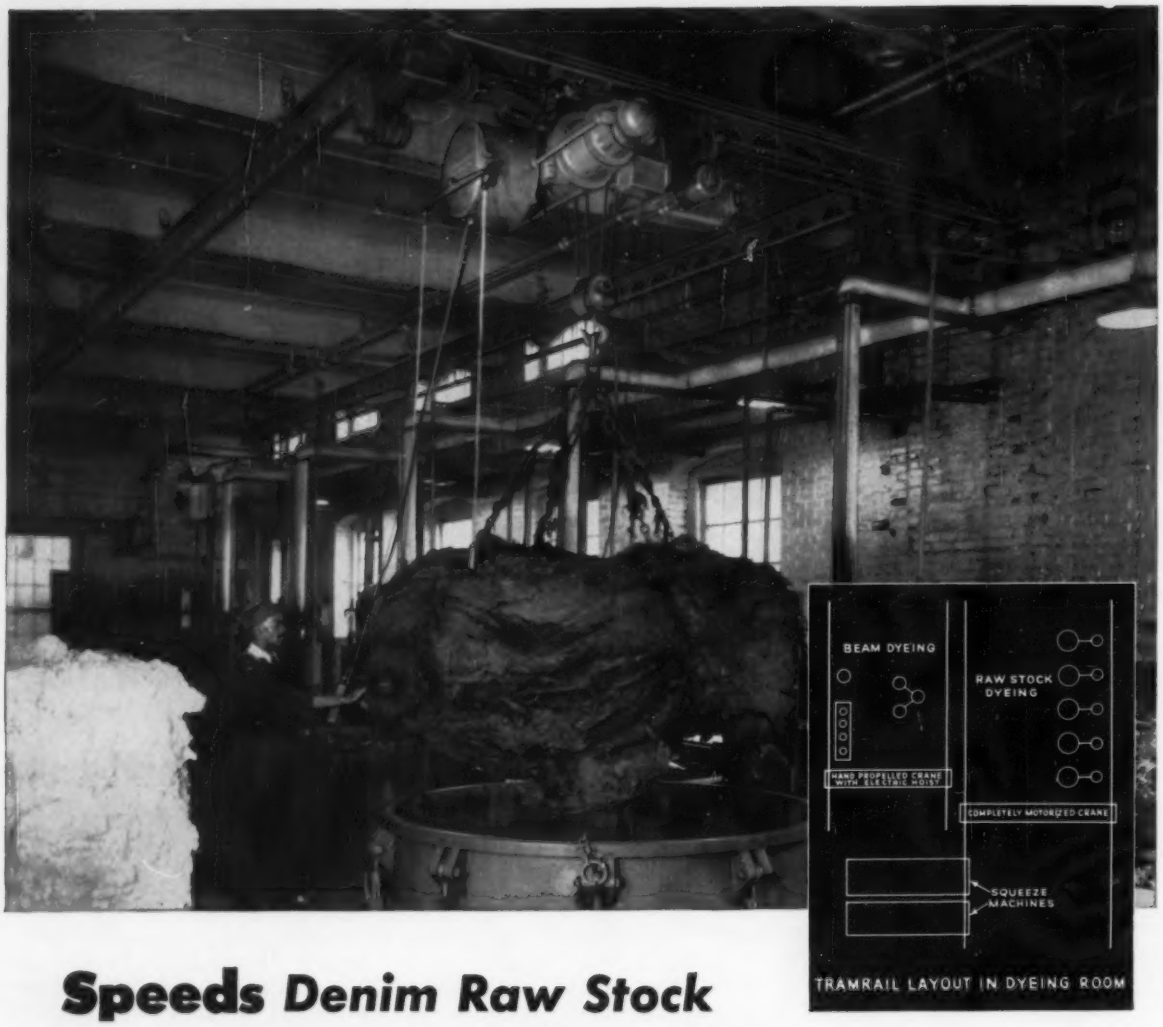
tive law enforcement during labor disputes, is available for $96.50 from The DeMille Foundation, Room 108, 5551 Marathon St., Hollywood 38, Calif.

Big Tab for Union Program. According to National Association of Manufacturers, a Manhattan research firm has estimated that the AFL-CIO's 14-point legislative program for the 86th Congress would cost the nation's taxpayers a minimum of $12.5 billion.

Textile Union Asks Wage Hike. Textile Workers Union of America (AFL-CIO) executive council has called on textile mill owners for a general wage increase, and has authorized an "industry-wide campaign" to get one. TWUA says that the cost of living has gone up 5.1% since the last general increase (10 cents an hour in October, 1956) and will continue to rise. Meanwhile, the union claims, productivity has gone up 18% (from 10.6 yd of fabric per man-hour to 12.5). Union delegates meet in February to map strategy for talks with northern textile mill owners, whose contracts with 65,000 workers expire April 15. That meeting may tip off union demands. About 25% of textile workers are now unionized.

New Contracts. Textile Workers Union of America (AFL-CIO) won the following wage increases in recent contract renewals: Textileather, Inc., Toledo, O., 26¾ cents over a three-year period; Londat Aetz Fabric Co., Elizabeth, N. J., 10 cents now, 10 cents Oct. 1959; Botany Finishing Co., Passaic, N. J., 5-7 cents for certain categories; Friedland Textile Print Co., Norwich, Conn., increased fringe benefits; Hartford Rayon Co., Rocky Hill, Conn., 5 cents plus new fringes; Roxbury Carpet Co., Saxonville, Mass., 8-13 cents for carders and spinners; Carleton Woolen Co., Leicester, Mass., higher fringes; and Whittal Carpet Co., Worcester, Mass., higher piece work rates for weavers.

Urge Cops Stop Violence. Labor Secretary Mitchell has called on the nation's police to crack down on union violations of local laws. Speaking before the FBI National Police Academy, Secretary Mitchell charged that union violence was the prime weapon of crooked union bosses, and that strict enforcement of local anti-violence ordinances would be the first step toward eliminating racketeers from the labor movement.



TRAMRAIL LAYOUT IN DYEING ROOM

Speeds Denim Raw Stock Dyeing and Handling

A THREE-TON completely motorized Cleveland Tramrail Crane was installed in the Dye Room of a leading North Carolina denim mill. This serves five 1500-pound dyeing machines. It speeds the handling of heavy kier covers and bulky wet cotton charges.

The hard manual work formerly required has been eliminated. Time lost in loading and unloading the dyeing machines is greatly reduced and consequently they can be in dyeing service a greater part of the time.

Because of satisfaction with the first crane, another crane was purchased and installed in an adjacent bay to serve a two-kier Gaston County dyeing machine for beam dyeing. This is a hand-propelled crane with electric hoist, that greatly facilitates the handling of beams in and out of the dyeing machines, extractor and dryer.

Write for free Engineering and Application Booklet No. 2008. Packed with valuable information.

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Overhead Materials Handling Equipment

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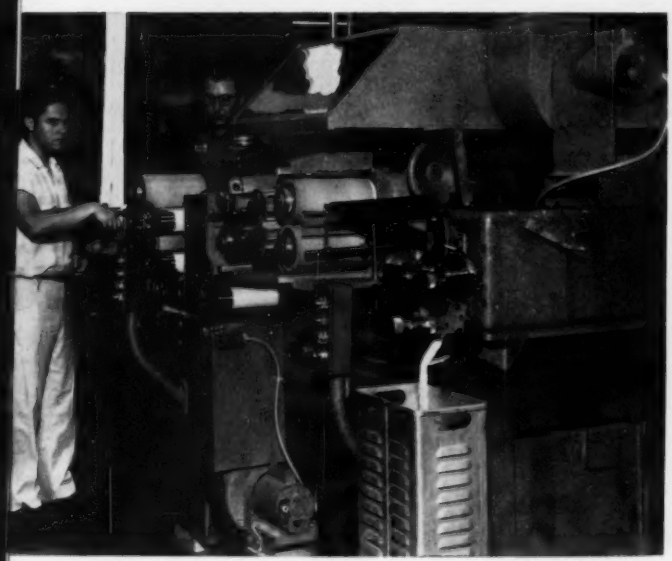
News in Brief

Eighty-two copies of Trumbull's "The Signing of the Declaration of Independence," Jacquard woven of silk in Lyons, France, in 1929, have been presented to the State Department by Arthur E. Wullschleger for hanging in all of the United States embassies around the world.

This hosiery by Thomas Oliver features a contour fit with no binding at toes or ankle. Shown above is fine-gauge anklet of Tycora.



The processing of synthetic two is now being studied at the School of Textiles, N. C. State College, on newly installed Turbo stapler.

These shoes made of polyethylene woven by Thomas Taylor & Sons were shown at recent National Shoe Fair by Ripon Knitting Works.

Yearling sheep is shorn in Bamberger's department store, Newark, while Linda Wiggins and Sidney Cox, Forstmann Woolen Co., watch.

Ma-Ro Hosiery Co. is now offering its B.V.D. Sox in packages resembling phonograph albums, each with a scene appropriate to its use.

ULTIMATE QUALITY AT MINIMUM COST . . .

THE VERTICAL "Y"

24 INCH WIDE SPINNING FRAME

The **ONLY** Straight-line Spinning

No Frills

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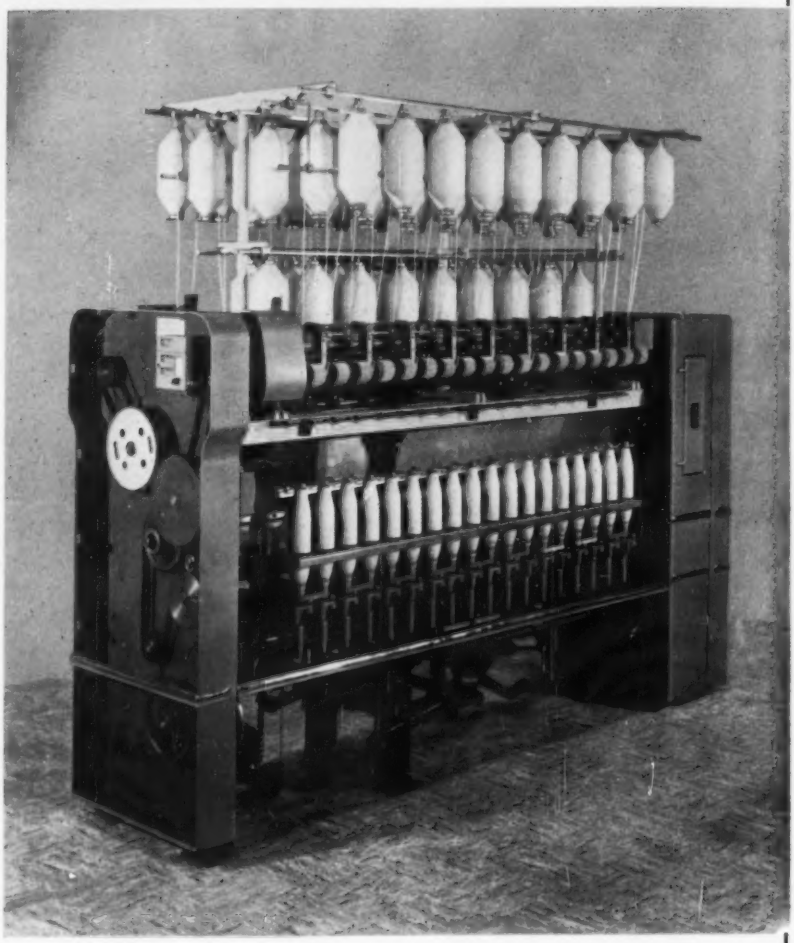

NEW SIMPLICITY ***POSITIVE CONTROL*** ***RUGGED DESIGN***

All anti-friction. Single control rings, right or left hand twist. Simplest gear drive on any spinning frame — only 12 gears and 3 chains. Positive — Simple — one adjustment traverse motion. Umbrella creels, single or double, for 10", 12", 14" bobbins.

TOMORROW'S FRAME TODAY

We invite your inquiry for further information and literature.

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AN EXECUTIVE Views

THE NEWS IN TEXTILES

Prepared by a man who is closely identified with the textile industry.

Inflationary taxes are in the offing

WE MIGHT as well start doing our spring tax worrying early, since the political rumblings from last November's election bode no good to the thrifty citizen's pocketbook. Tax changes which were prominently mentioned right after the election would be highly inflationary; but then practically everything our government has done for 25 years has been highly inflationary, so these new proposals, although distressing, are not novel.

One of the first tax changes recommended was the demand by the big labor monopolists to reduce taxes in the lower brackets, where most of the tax money comes from. Evidently feeling that it is foolish for a government to tax when it can borrow, the labor moguls promise a drive for more borrowing and less taxing.

Another scheme which has been proposed from time to time for a good many years, but fortunately rejected, is a manufacturer's sales tax. That is, an admitted and open manufacturer's sales tax—we have had a concealed one for years.

Any tax on a corporation is a sales tax levied on the public. It is a covert tax, however, which sneaks up on the public under false pretenses, since the proponents of these corporation taxes always try to kid the people into believing that the taxes are paid by a flourishing bevy of millionaires instead of by the ordinary payroller. A well managed corporation immediately passes its taxes on to its customers, and any corporation tax automatically becomes a sales tax. Now, however, it is proposed to heap upon this hidden tax an open and obvious one, which immediately guarantees inflationary complications.

THE ONLY honest sales tax is one collected directly from the consumer, who is the only chap that can not pass on a tax. When the consumer pays it directly there is no pyramiding, but when a manufacturer pays it, everybody else, all down the line, tacks on his percentage, and this sort of tax will have exactly the same inflationary effect as widespread wage increases in manufacturing plants, because this tax will increase the cost of all manufactured goods before distributing agencies begin figuring their selling prices.

The net psychological effect of this sort of tax is to create the widespread impression that the cost of living has gone up and two or three more rounds of inflationary wage increases must be granted to offset this. If there is any one tax reform that this country urgently needs, it is to abandon all of these hidden, dishonest taxes, and adopt some that plainly make themselves known for what they are and which do not hide in the cost of living. Most of the major taxation policies of this country have been deliberately developed to help create inflation.

The corporation tax itself is of course inflationary because this tax money is concealed in the cost of living, and it results in a clamor for higher wages. The taxpayer who is actually meeting the tax does not know it, and is convinced that his cost of living has increased, instead of realizing his taxes have been raised. Our payroll deduction scheme for collecting taxes is terrifically inflationary because the typical workman does not feel that he pays any income tax at all, but that his employer pays his taxes for him, and if taxes are raised wages must be raised.

No more salutary reform could possibly be imagined than the adoption of a system which made it brutally clear to every taxpayer that he was being taxed, and under which he could clearly calculate the amount of his tax. The heart of the hypocritical politician always bleeds for the poor working stiff who can't afford to pay taxes—that is, not direct taxes that he can recognize—but who is supposed to watch his cost of living go up with equanimity as the taxes are collected upstream somewhere and added to his daily bills.

THE RECESSION, depression, or what you please to call it, which has been plaguing the country for the past year, is now abating somewhat, and probably the chief reason for its abatement is the government going into the hole 12 billion dollars deeper. For 25 years our economy has been an inflationary economy and our

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and
Drapery Fabrics

Colorful
FAIRTEX®
metallic
YARNS

LUSTRE THAT LIVES
. . . for the Life of the Fabric!

Add the luxury look to your fabrics with the glitter of Fairtex with Foil or Metallized Mylar* or Fairtex Butyrate Metallic Yarns.

Choose from the wide range of style-wise Fairtex colors . . . all are manufactured to meet your customers' requirements. Fairtex metallic yarns are non-tarnishing and can be safely washed, dry-cleaned or scoured.

These smooth, pliable and uniform yarns do not flake or break . . . work easily in weaving or knitting.

Make your fabrics look better, sell better . . . use the vibrant beauty of Fairtex Metallic Yarns to boost buy-appeal!

*Dupont's TM for polyester film

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3030

prosperity has been measured by the size of the national debt. Every time we have a recession we have to increase the national debt some more to postpone the evil day of reckoning with inflation.

For several weeks during October and November, the stock market boomed cheerily, but some of the best authorities on financial matters declared that stocks were overvalued 30 to 40 per cent and the boom in the stock market seemed to be one of despair, rather than cheery optimism. Stock prices went up because millions of persons smelled more inflation in the air and felt certain that the value of their dollars was going down again, and they were plunging into the stock market in the hope that it would constitute a satisfactory hedge against this expected inflation.

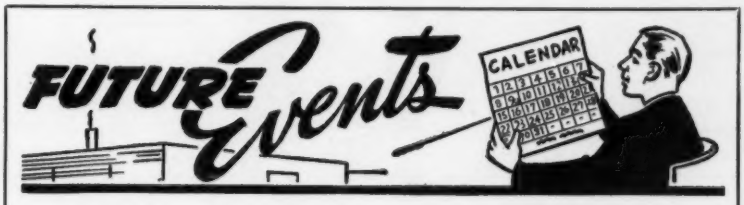
The original New Deal slogan as announced by a prominent New Dealer, was, "Tax and tax; spend and spend; elect and elect." He might more accurately have pronounced it "borrow and borrow" instead of "tax and tax," since the principal genius of the New Deal seemed to be a childish faith in the virtue of borrowed money to relieve every economic ailment.

Now both political parties seem to have adopted this lunatic fiscal policy, and the prudent, level-headed people in the country instead of being collected in one political organization to try to stem the tide of inflation, are sprinkled around in both of the major parties so that their influence is watered down to a state of virtual impotence.

A RECENT article by Senator Byrd stated that it was his opinion that the principal cause of inflation was government deficit financing. We would like to suggest that an equally important cause is the endless wage increases forced upon employers by all-powerful labor monopolies to push up endlessly the cost of living. Much of the need for government deficit financing arises from these constant increases in the prices of everything the government must buy. It is generally a year or more after an appropriation is made before the money is spent, and by that time the cost of everything has gone up enough so that the appropriated funds are inadequate.

Senator Byrd pointed out that the only way to control inflation was to stop creating it, and that the first step was for the government to live within its income. This is of course elementary, but it is not an elementary problem for the government to do it. A public which consistently demands lower taxes and more handouts is not going to support frugality and thrift in government. The typical citizen

(Continued on page 175)



DATE		EVENT	LOCATION
Jan.	10	South Central Section, AATCC	Hotel Patten Chattanooga, Tenn.
	16	Hudson-Mohawk Section AATCC	Jack's Restaurant Albany, N. Y.
	16	Northern New England Section, AATCC	Colonial Club Lynnfield, Mass.
	24	Piedmont Section AATCC	Poinsett Hotel Greenville, S. C.
	26-29	Plant Maintenance & Engineering Show	Public Auditorium Cleveland, Ohio
	26-29	International Heating & Air Conditioning Exposition	Convention Hall Philadelphia, Pa.
Feb.	18-19	Chemical Market Research Association (subject: chemicals for the textile industry).	Dinkler Plaza Hotel Atlanta, Ga.
Mar..	12-13	Textile Division, ASME	Clemson House Clemson, S. C.
	19	Southern Textile Methods & Standards Association	Clemson House Clemson, S. C.
	19-21	American Cotton Manufacturers Institute annual convention	Palm Beach Biltmore Palm Beach, Fla.
	23-24	Textile Research Institute annual meeting	Hotel Commodore New York City
	26	Textile Quality Control Association	N. C. State College Raleigh, N. C.
Apr.	2-3	Textile Subcommittee, AIEE	Heart of Atlanta Motel Atlanta, Ga.
	9-11	Alabama Textile Manufacturers Association annual convention	Hotel Buena Vista Biloxi, Miss.
	17-18	Delta Kappa Phi Fraternity annual convention	Roger Smith Hotel Washington, D. C.
	28-29	Institute of Textile Technology technical advisory committee and board of trustees	I. T. T. Charlottesville, Va.
	29-30	Fiber Society, Inc., meeting	Fontana Village, N. C.
May	2	Alabama Textile Operating Executives slashing and weaving discussion	Thach Auditorium Auburn, Ala.
	4-8	Knitting Arts Exposition	The Auditorium Atlantic City, N. J.
	5	Underwear Institute annual meeting	Hotel Traymore Atlantic City, N. J.
	8-12	Tufted Textile Manufacturers Association annual convention	Aboard Cruiser "Arosa Sun" from Savannah, Ga.
	12-15	Textile Institute annual conference	Scarborough, England
	12-14	Cotton Research Clinic	Grove Park Inn Asheville, N. J
	18-23	National Cotton Week	
June	18-20	Southern Textile Association annual convention	Ocean Forest Hotel Myrtle Beach, S. C.
Sept.	10-11	Fiber Society, Inc., meeting	Princeton, N. J.
	10-21	3rd International Exposition of Textile Machinery	Samples Fair Grounds Milan, Italy
Oct.	7	Chemical Finishing Conference	Statler-Hilton Washington, D. C.
	8-10	AATCC National Convention	Sheraton Park and Shoreham Hotels Washington, D. C.
Nov.	17-20	Packaging Machinery Manufacturers Institute Show and Forum	Coliseum and Hotel Statler New York City

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Textile Industries
FOR JANUARY 1959

TEXTILE RECOVERY

by E. G. Field
E. G. Field & Associates
Exclusive

WHILE predictions are often dangerous, the trend of industrial experience can be observed. There has been some improvement in most lines of textile manufacture.

The accompanying chart tells the story of relative spindle-hours run for several years back. Since the published statistics are for four- and five-week periods, the progressive averages for three months have been used. This curve shows a somewhat wave-like motion of business activity. The average was computed from the earlier years and the recent monthly experience has been drawn in comparison therewith.

The periods of ups and downs usually have been within plus or minus 10 per cent of the average. In recent months, the operations have been considerably below normal and there has been a lack of business for the spinning mills.

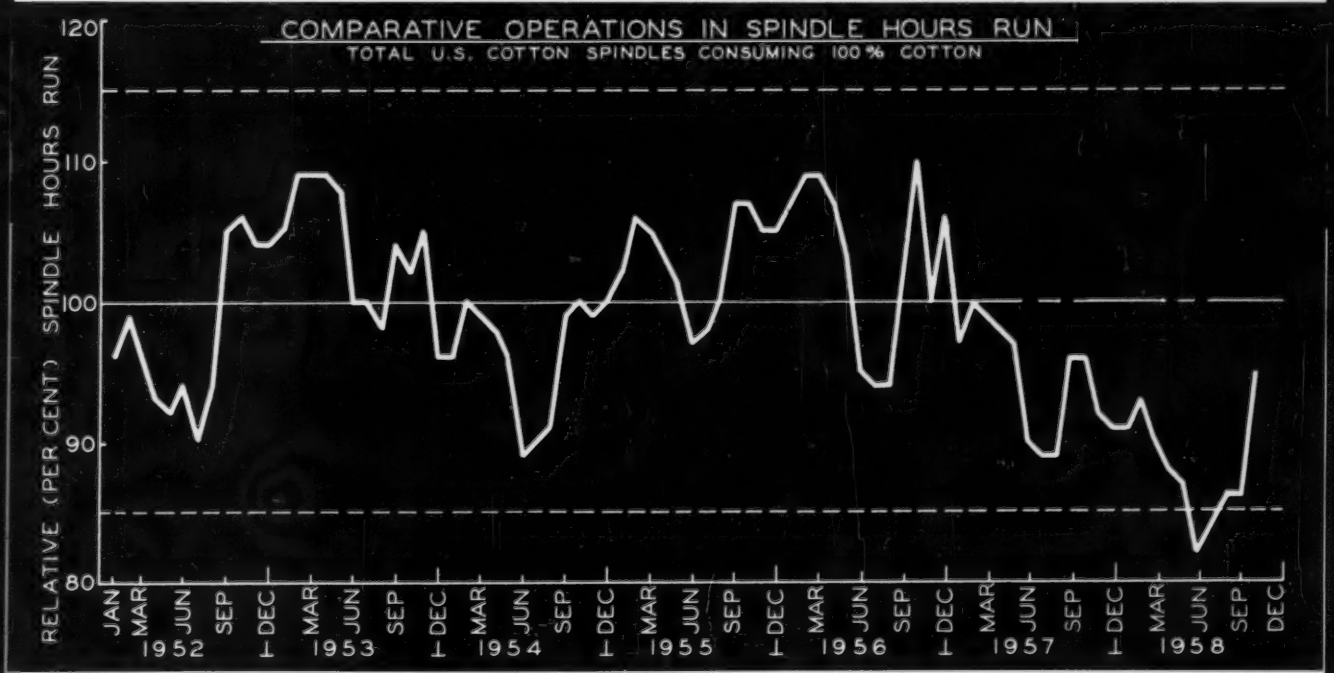
The dotted lines have been drawn at danger limits. The continued operation below the average since January 1957 is technically a warning that the industry average has shifted, but this is still to be confirmed. The recent recovery placed the August report back inside the past normal field. Whether this is a temporary condition or the industry average has been definitely lowered, is still to be determined.

The last few months have shown some improvement, but may possibly be a temporary condition while customers replenish low inventories. While the spindle-hours have been increasing, there has not been sufficient improvement in sales prices to indicate that correction has been made. Meantime, the increased costs continue to further damage the situation.

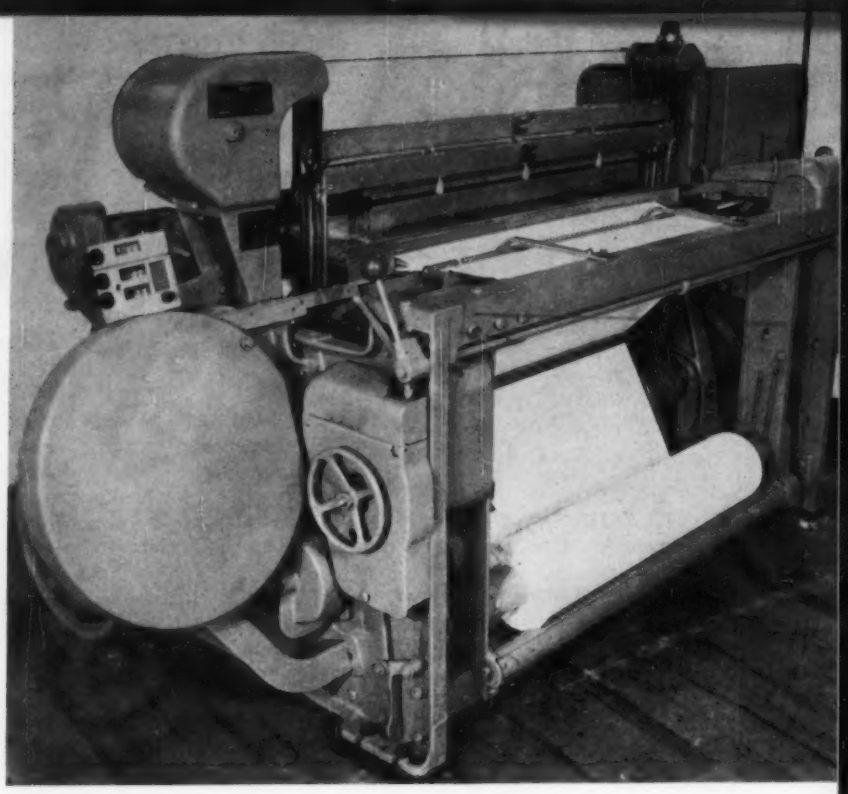
Looking at the chart, the character of the down-trend in 1957 and early 1958 differs from a normal recession and suggests a shift down to a new level of operations. Probably the import of foreign-made cloth has already eliminated some of the spindles formerly available, so that normal operations may be resumed on the remaining spindles, to establish a new average at a lower level.

The chart currently indicates some improvement is being made.

Hours run by cotton-consuming spindles, based on progressive averages for three-month periods; 1948-1957 = 100. The character of the down-trend in 1957 and 1958 differs from a normal recession, and suggests a shift down to a new level of operations. However, the chart currently indicates that some improvement is being made; the figure for October, latest available as we go to press, is 95%.



Here's That New Shuttleless Loom



by F. M. FitzGerald
Director of Research
Draper Corp.

THE DRAPER shuttleless loom is of the flat- or broad-loom type, producing a single sheet of fabric in widths from 36 to 64 inches, at speeds of about 250 ppm in the narrower widths to about 200 ppm in wider goods.

Usable reed space is 5 inches greater than the nominal size of the loom. Maximum cloth width can be 2 inches greater than nominal size.

Fabrics woven to date in our laboratory at Hopedale, Mass., range from print cloths through sheetings, drills, twills, sateens, denims, corduroys, Canton flannels, etc.—all spun-yarn fabrics in cottons and blends. Continuous filament synthetics have not as yet been attempted.

The loom is low in silhouette, without overhead arches and without handrail over the reed, which makes for easier operation by the weaver. The over-all floor space is somewhat less than for an X-2 model of corresponding size; the length is slightly more, while the depth is 7 to 9 inches less, depending on warp beam diameters.

Picking. The method of filling insertion is the chief point of difference between this loom and a conventional loom. Filling supply packages are in the form of cones, preferably 8 to 9 pounds in weight, mounted at the right-hand end of the machine so that two cones can be pig-tailed together to effect a continuous supply.

Picking is accomplished by the filling control mechanism located at the right-hand side of the loom, and by the right- and left-hand filling carriers. The filling control mechanism positions, measures, and cuts the yarn so that the correct length of filling can be drawn into the warp shed under tension by the filling carriers.

The carriers are mounted on the ends of flexible steel tapes. They work in and out of the shed from opposite sides of the loom in a modification of the old rapier principle. (See illustrations.)

Each carrier tape is fastened to an oscillating aluminum wheel. As the wheels turn, the carriers enter the open shed (one from each side) and mate in the center. The right-hand carrier, which has picked up the filling from the filling control, transfers it to the left-hand carrier near the center of the goods.

As the tapes withdraw from the shed, the left-hand filling carrier pulls across the shed the loose end of filling which has been measured by the timing of the filling control cams. The other end of the filling is held by a gripper in the filling control mechanism.

Selvage. Filling is laid in cycles of two picks. The two picks resemble a hairpin with the open

What It Will Do

■ It is claimed that this loom, as compared to a conventional loom using shuttles and weaving the same fabric, will offer the mill the following advantages:

1. Increased production speeds.

2. Economies in fixing and maintenance costs.

3. Elimination of battery hands.

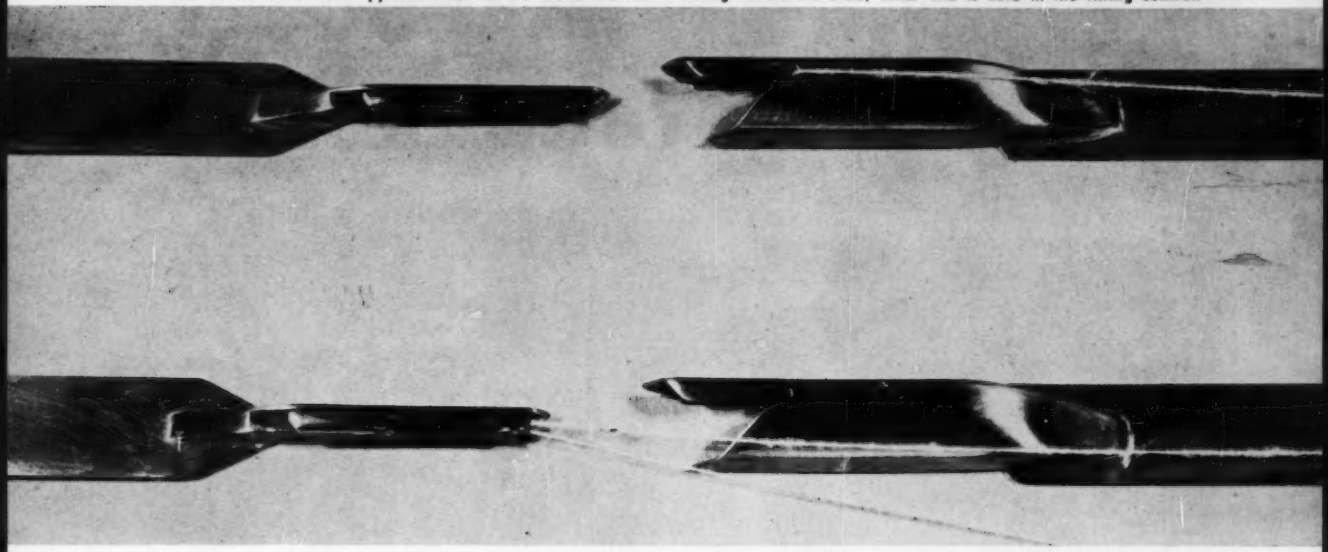
4. Reduction of supply costs.

5. Easier operation by weaver and fixer.

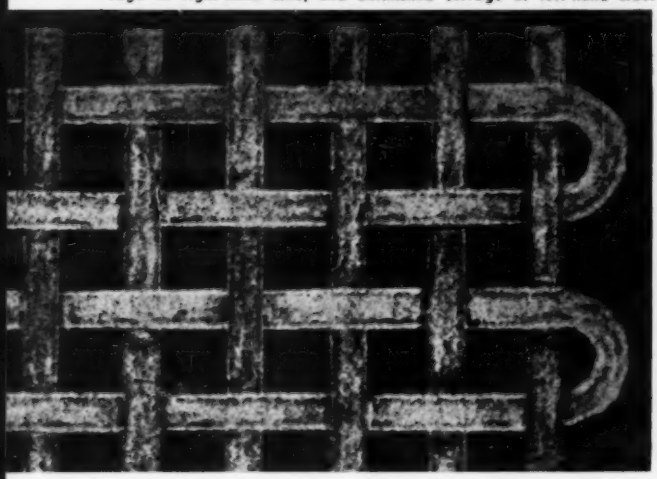
6. Other material handling savings because of larger filling, cloth, and warp capacity.

7. Reduction in noise level.

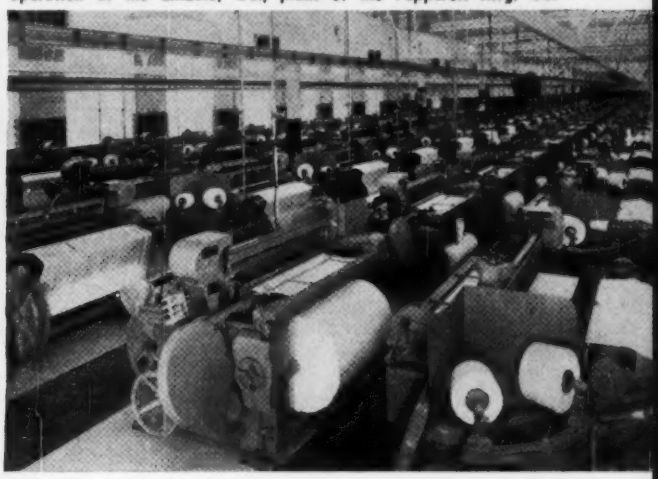
Filling insertion is accomplished by two sets of mechanisms: the filling control mechanism at the right-hand side of the loom (not shown), and the right-hand and left-hand filling carriers (below). The filling carriers are mounted on flexible steel tapes, and work in and out of the shed from opposite sides of the loom. The carriers enter the open shed and mate in the center, where the right-hand carrier, which has picked up the filling from the filling control, transfers it to the left-hand carrier near the center of the shed. As the tapes withdraw, the left-hand carrier pulls the loose end of filling across the shed; other end is held in the filling control.



Filling is laid in cycles of two picks each. Fabric has smooth selvage at right-hand side, and unfinished selvage at left-hand side.



The largest mill installation so far is the 100 shuttleless looms in operation at the Lindale, Ga., plant of the Pepperell Mfg. Co.



end at the left and the bend at the right. This produces a fabric with a smooth or uniform selvage at the right and an unfinished selvage at the left.

A presentable left-hand selvage is made possible by a selvage binder mechanism and the separate selvage yarn. The binder ends, one on each spool mounted on a revolving disk, lock the filling end with a motion completely independent of the harness motion. For every revolution of the binder disk, the two ends of binder yarn cross each other twice. This produces a binder cord of the two outside warp ends—in effect a full-turn leno—and can be set to bind every pick or every two picks.

The edge left by the filling ends projecting beyond the binder cord can be sheared or trimmed in a number of ways to produce a relatively smooth edge. These ends can be held to 3/8 inch in the loom, and the waste resulting is no greater than the waste from feeler bunches on bobbins.

Beat-Up. Beat-up of the pick is by means of a cam-operated, all-metal reed mounted on a light metal lay beam, which is supported by light metal swords. No crank shaft is used.

Lay operating cams are designed with a dwell of nearly one-half the cycle to allow the entry and withdrawal of the filling carriers.

Harness Motion. Treadles underneath are pivoted at the front of the loom, allowing identical cams to be used for all harnesses in a set, except for special weaves.

(Continued on page 175)

MAGOG STANDARDIZES PRINTING

Now the printing speed for any fabric is determined in a few simple steps. This is the first installment of an article which describes in detail the methods used in this modern plant.

A series of Printing Standard Calculators, one of which is illustrated above, were developed at Magog Print Works to afford a more rapid means of determining printing production standards for any given pattern. Allowances for any given pattern were formerly computed from the various tables by a more laborious method; the calculator is merely a shortcut. Development and use of the calculator will be described in a subsequent installment of this article.

by Marcel Ouellette
Standards Department
Magog Print Works
Dominion Textile Co.

Exclusive

PRINTING in a modern, diversified plant such as the Magog Print Works, Magog, Quebec, which places few restrictions on styles of printing, calls for the combined skills and experience of colorists, printers, and management if quality printing at a high production rate is to be achieved. Many factors, both constant and variable, affect printing production; Magog management initiated a long-range program to study these with the aim of standardizing printing production.

The program, now completed, establishes printing production standards for patterns regardless of their complexity or difficulty in printing.

The Magog Division of Dominion Textile Co. Ltd., Magog, Quebec, is 30 miles from the Vermont border.

Printing production standards developed by Magog are based on a very comprehensive and practical study of printing operations in which all constant and variable factors affecting printing production have been carefully analyzed. These factors have been translated into figures to denote allowances in printing; thus, for any new pattern going into production, regardless of its complexity, the allowances pertaining to its printing are computed to produce a meaningful machine production standard expressed in fractions of an hour per 1,000 yards.

Since the Magog Print Works places few restrictions on styles of printing, it requires many color classes. In addition, the range of fabrics is wide, including lawns, broadcloths, twills, and drapery fabrics; and its printing machines are not all of similar design nor of uniform size. Thus, the number of factors applicable to a given printing can be large, and the computations involved can be many and rather laborious.

It was in view of this that it occurred to us at Magog to devise a more rapid means of determining printing production standards. A series of Printing Standard Calculators (one is pictured on p. 56), or slide charts, which were subsequently developed, reduce the actual computation of the various allowances applicable to any new pattern to a matter of seconds. In essence, the Printing Standard Calculator is a memory chart containing data for rapid utilization.

The Printing Standard Calculator, however, is merely a time-saving device, and the figures which it contains, denoting allowances, have been derived from an exhaustive study undertaken at Magog to standardize printing production.

While it is not the intent of this article to discuss this program, from its beginnings to its successful completion, showing how the various allowances have been derived, it is worthwhile to briefly treat the factors that affect printing production in order to gain a better understanding of the Calculator, its make-up and application. Accordingly, in the following pages, each factor will be discussed separately, and then by way of example a comparison will be made of the old and new method of determining printing production standards. Some discussion of print works practices is likewise necessary, though these will be treated briefly as they are well known to print works personnel.

What Is a Machine's Maximum Speed? The top speed of a printing machine is that beyond which the printed fabric would not be sufficiently dried. That speed, however, may vary from one machine to another for the following rea-

TABLE 1. Printing Machine Grouping at Magog Print Works

Machine No.	No. Rollers
Group 1[1]	
2	8
6	8
11	6
12	6
13	8
14	8
20	10
21	10
Group 2[2]	
3	3
4	3
5	5
Group 3[3]	
7	7
15	10
16	10
17	10
18	12

[1]Maximum machine speed: 0.255 hr per 1000 yd
[2]Maximum machine speed: 0.197 hr per 1000 yd
[3]Maximum machine speed: 0.301 hr per 1000 yd

TABLE 2. Printers' Allowances in Fractions of an Hour for Maintenance of Fit

Degree of Fit	Number of Rollers							
	2	3	4	5	6	7	8	9*
1	—	—	.010	.015	.020	.025	.030	.035
2	.010	.015	.020	.025	.035	.045	.055	.065
3	.015	.020	.025	.035	.045	.060	.075	.090
4	.020	.025	.035	.050	.065	.080	.095	.110
5	.025	.040	.055	.070	.085	.100	.115	.140

*Or more

sons (aside from the machine's drying capacity):

(1) Size of copper or printing rollers

(2) Size of box-wheel or jack gear

(3) Thickness of lapping

(4) Construction of printing machine

There is a relationship between size of the printing roller and size of the box-wheel required. In print works practice, after a pattern change the old pattern rollers are placed into storage until a repeat order is received. Or, if the rollers are worn from prolonged usage, they are turned down in a lathe and built up in size to be engraved again.

Should a pattern be placed into a machine with rollers 5″ in diameter where the pattern before it had rollers 5½″ in diameter, the size of the box-wheel would accordingly have to be changed. Since the main cylinder is not positively driven but rotates through the pressures of the revolving printing rollers, a decrease in diameter of the printing rollers would reduce the speed of the cylinder.

However, the printing rollers, which are driven positively through the end box-wheel gears, will be speeded up by using a smaller size gear. For instance, with a set of 5½″ printing rollers we would use a 32-tooth box-wheel, while with a set of 5″ printing rollers we would prefer to use a 30-tooth box-wheel, provided that the lapping is of the same thickness. In other words, the variation in the speed of the printing rollers is compensated by the box-wheel to maintain a relatively constant cylinder speed.

As for the thickness of the lapping, which is actually many thicknesses of cloth wound uniformly around the cylinder to give it as much resilience as possible, it will affect cylinder speed, dependent on its condition—whether new or worn. But from a practical standpoint, this variation in cylinder speed is negligible.

However, the thickness of the lapping does have bearing, as previously mentioned, on size of box-wheel used. In fact, the printers must at all times make sure that the box-wheel is meshing as much as possible with the crown gear. It happens frequently, therefore, that we may use a 30-tooth box-wheel with one set of printing rollers 5″ in diameter, while at another time we may have to use a 32-tooth box-wheel with another set of printing rollers of the same diameter, simply because the lapping has become thinner through prolonged usage.

Lastly, there is the printing machine itself—its construction and gearing, power supply, motor size and gearing. All these influence speed. The ideal situation, of course, is one where all machines have the same maximum speed. However, this is not possible, for many reasons, and the best that can be done is to standardize our procedure by grouping our machines with the least number of groupings possible, for simplicity's sake. At Magog, we have grouped our machines as shown in *Table 1*.

Should a pattern of six colors or less be scheduled for machine No. 13, for example, it could just as well be run on any of the other machines in Group 1.

Five Degrees of Fit. Sufficient time is allowed the printer to make certain that each roller in the pattern is in proper fit to begin with, and that it remains that way throughout the printing. The amount of time that he is allowed is dependent on the exactness of fit that a given pattern requires. This allowance is increased as the number of rollers requiring exacting fit is increased. It will be noted, however, from the illustrated fabric prints and the degree of fit assigned to each, that a smaller number of rollers does not necessarily indicate a faster-running job.

Five degrees of fit have been established. Patterns of simplest design fall into fit No. 1. As they become more complex in execution, requiring more roller adjustment and generally more attention and precautionary measures to insure good pattern fit, they are assigned to the appropriate higher-numbered degree of fit. This is the superintendent's responsibility; he must draw on his knowledge and experience of the printing operations.

Listed in *Table 2*, alongside each degree of fit, are allowances in fractions of an hour per 1,000 yards given a printer for necessary roller adjustments to maintain fit.

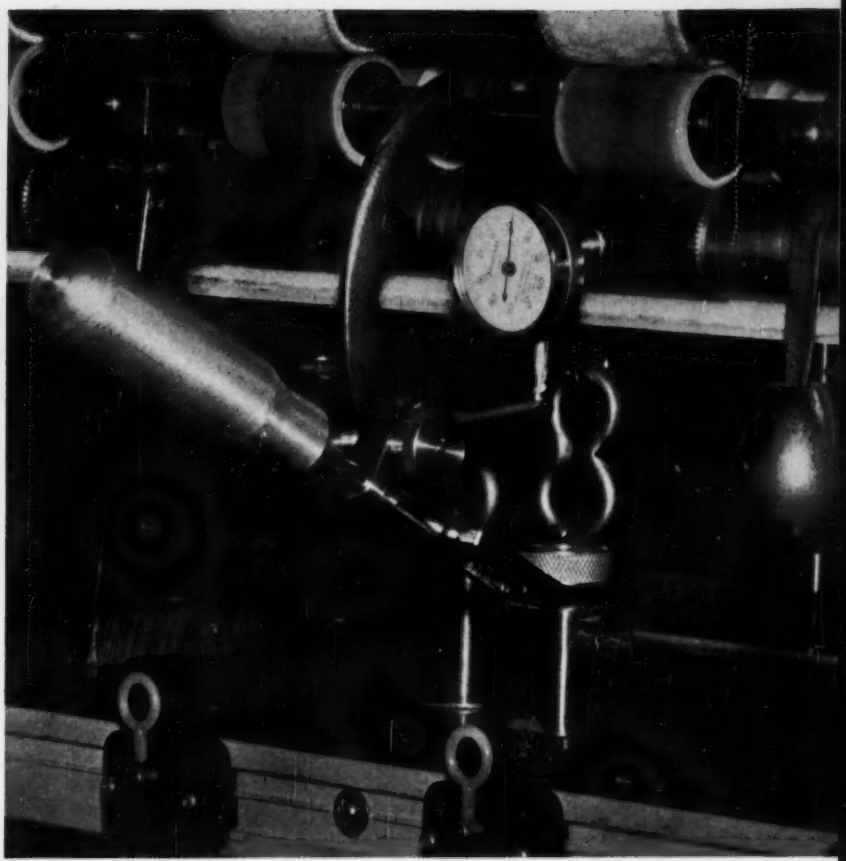
(To be continued next issue)

Some causes and effects of roll run-out

It reduces yarn breaking strength and uniformity and becomes more critical as draft increases, but it can be measured and controlled.

by Herman Granberry
Head, Mechanical Department
West Point Manufacturing Co.

Exclusive



PICTURE 1. A magnetic base on this indicator permits top and bottom roll run-out readings to be made while the machine is running. It is here adjusted for making slubber reading.

WHAT is roll run-out and what causes it? A roll is said to run out when it turns about some center other than its true center. This is sometimes referred to as "lope" or, more accurately, the roll is sai dto be eccentric.

In Figure 1 the concentric roll (a) rotates about its true center "O"; the eccentric roll (b) rotates about some point "R" as a center of rotation instead of rotating about "O," the center of the roll.

Either or both top and bottom rolls on roving and spinning frames may be eccentric or "off center." Notice in Figure 1 that the eccentricity (the distance from "O" to "R") is one-half of the run-out; we may say that the run-out is twice the eccentricity.

Roll run-out may be the result of one or more causes. The roll may be made true and round, but if the screw neck or other neck is put in off center the roll will have run-out. Manufacturers of quality rolls are quite conscious of this and usually test the rolls before they are shipped from their plant. Of course, it is always possible for the inspectors to make mistakes and overlook a few defective parts.

Probably one of the most frequent causes of bottom-roll run-out is the bending of the rolls as they are being assembled and installed in the roving or spinning frame. The steel rolls are long and limber and they are easily bent during installation.

When installing new rolls or when removing rolls for scrubbing or overhauling it is quite important that enough people be used to support adequately the rolls throughout their length. Very careful handling is a must if the rolls are not to be bent.

Rolls may, of course, become bent while they are in use in the frame—from lap-ups, chokes, or other accidents.

For the above reasons it is good practice to check bottom steel rolls for run-out after they have been installed, with the top rolls and weighting in place. The rolls should also be checked when the frame is first started up after each overhauling.

Sometimes, it is wise to check the bottom steel roll for run-out just before the frame is torn down for overhauling. This gives an opportunity to have the defective rolls repaired during the overhauling. Even though the rolls are checked *before* overhauling it is still desirable to check them *after* the overhauling to see that they are in good operating condition.

Top rolls (on roving and spinning frames) as well as bottom rolls may have run-out. Some of the causes of top roll run-out are:

1. Faulty female centers on the buffing machine.

2. Faulty spindle bearings in the buffing machine.

3. Improper mounting of the arbor in the buffing center.

4. Eccentric bearings or arbors in antifriction type rolls.

5. Eccentric solid arbors or lumps of glue on the arbor cause an uneven thickness of rubber cot around the roll and this may appear as run-out.

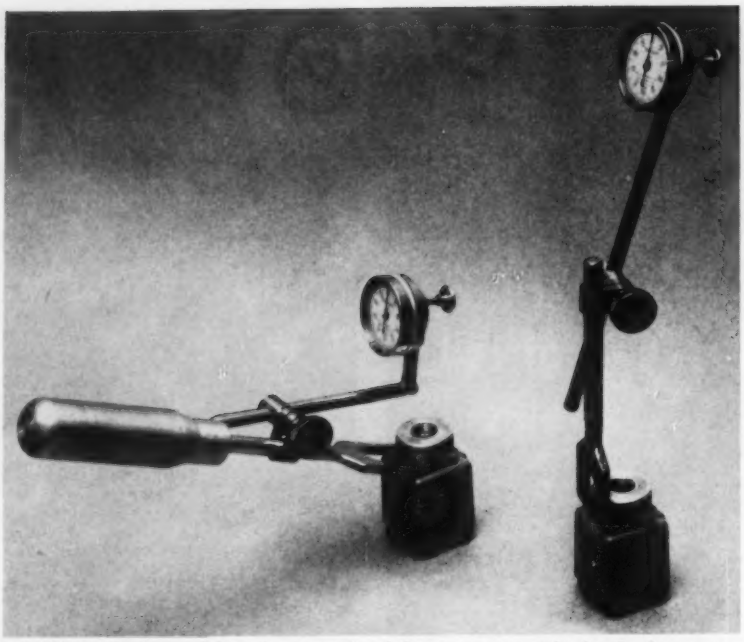
Good practice suggests that the rolls be buffed while rotating about the same centers as they will rotate about when running on the roving or spinning frame. For example, it is not usually wise to buff solid arbor rolls while mounted on male centers when they will run against cap bar nebs on the frame. This may work satisfactorily, however, *providing* the outside diameter of the gudgeons (or arbor ends) are ground so as to be concentric with the female center in the ends of the arbor.

It is also apparent that eccentricity or run-out will be introduced if the ends of the roll arbors are nicked or scarred so that they do not seat themselves properly in the center of the female centers of the buffing machine.

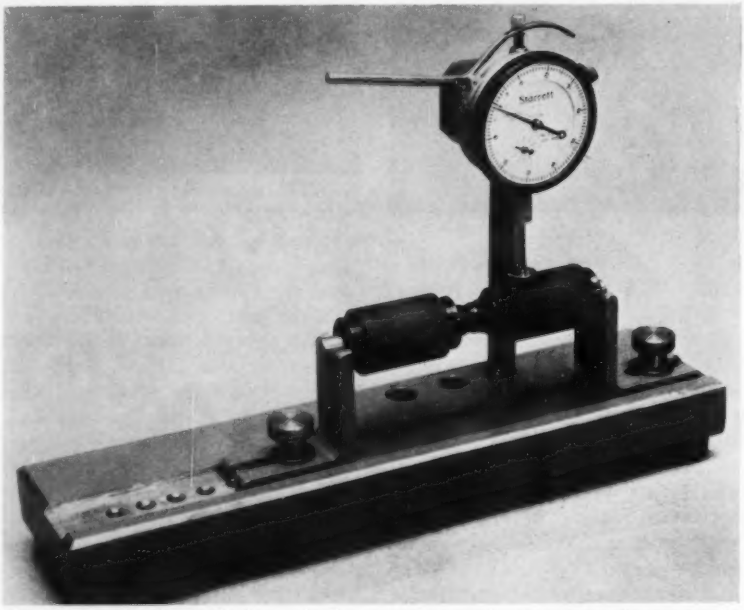
It is wise to provide the operator of the cot buffing operation with a testing device for checking the top roll run-out. This will enable him to do a better and more accurate job of setting up the buffing operation and help prevent eccentric top rolls from getting out and into the card room and spinning room. It is also possible to check the top roll for run-out while it is in place and running on the roving or spinning frame.

It has been found that in some cases solid arbors with eccentric bosses may allow the cot to creep and thus cause run-out to develop. The solid arbor should be concentric at all points along the roll and should have the glue evenly applied to avoid pockets or lumps under the cot.

If the roll is eccentric (i.e., the boss), then the cot may be buffed concentric with the center of rotation, but the cot will have a thick side and a thin side due to the eccentricity of the boss underneath it. The cot may work loose and may "creep" or "walk" around the boss so that the thick part of the cot and the high part of the arbor are together and thus cause the surface of the cot to run out.



PICTURE 2. Device to left is for conventional frames; one to right for Gwaltneys, etc.

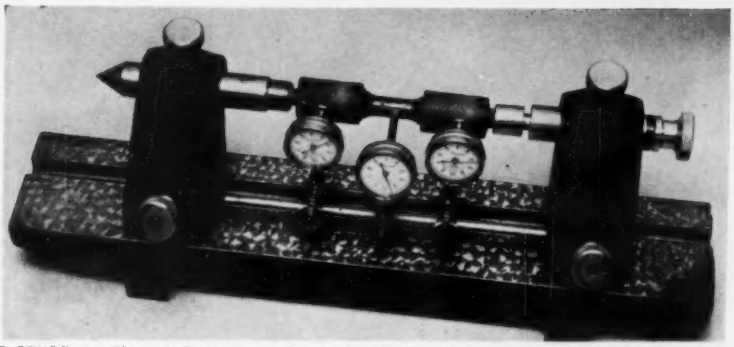


PICTURE 3. This shop-built device (gudgeons rest in vees) checks top roll run-out only.

Another possible effect of the use of a top roll arbor that is eccentric is that although the cot may be buffed to give a concentric outer surface, the thick part of the cot compresses more under a given load than does the thin side of the cot and this may result in undesirable drafting waves which affect the yarn in a way quite similar to the way that roll run-out would affect it.

It must also be realized that the cot should be applied to the arbor in such a way as to avoid areas that are compressed or under uneven pressure. If the cot is pressed onto the arbor these areas are more likely to occur than if the cot is "blown" onto the arbor.

If a cot is pressed onto the arbor it will be noted that it may stick for awhile and then slip, stick, slip. When the cot sticks the rub-



PICTURE 4. Three indicators can be used with this device for reading top-roll run-out.

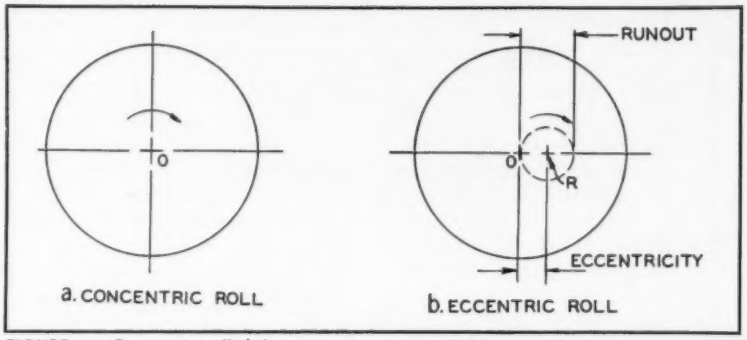


FIGURE 1. Concentric roll (a) turns on true center "O"; eccentric one on center "R".

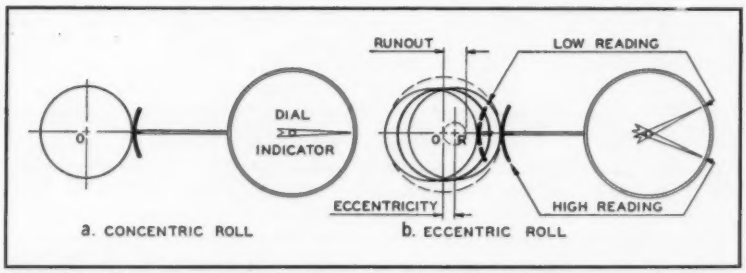


FIGURE 2. This schematic drawing shows the relationship of indicator to roll—when in position, a center line drawn through the dial center and presser foot center should coincide with the center line of the roll. In the illustration to the left the dial shows no deflection (other than vibration induced by the roll flutes) and thus indicates no eccentricity. In the other illustration the dial pointer is moving equally above and below the zero or no-eccentricity point (some dials may be set with the pointer at zero to simplify reading; others require subtracting the low reading from the high reading to arrive at the run-out). The large circle of broken lines indicates the path a point on the roll circumference would generate if the roll, with its indicated eccentricity, were free to move (unhindered by roll stands, etc.) along that path. The heavy arcs, both broken and solid, represent the presser foot as it follows the roll flutes through back (broken arc and low reading) and front (solid arc and high reading) center as bent roll "crankshafts." All conditions are exaggerated.

ber is compressed more than when it is free and this compression causes the diameter of the cot to be greater than usual (to a small extent).

When the cot is in position, it may be left with some areas or sections of the cot under more compression than others. This condition usually does not change in buffing but may change as the roll is run, especially if the roll loading is relatively high.

As this loading kneads the cot, and especially if the cot is applied with a water soluble glue which may absorb moisture and soften, the stresses in the cot will tend to work out of the cot and cause a condition that appears as run-out. This may be greatly improved by calendering the rolls after the cots are applied and before the cots are buffed.

This is an artificial running-in of the cots under heavy loading that tends to knead and iron out any stresses in the cot. The most satisfactory results are obtained by blowing the cots onto the arbor. This method usually avoids the uneven stresses in the cot that tend to cause runout of the surface of the cot.

How is roll run-out measured? The "old" method of measuring or of indicating run-out is to chalk the roll as it turns. This is done by holding a piece of chalk closer and closer to a rotating roll until the chalk touches the high point of roll and not the low point.

The length of the chalk mark around the roll usually indicates, to a degree, the amount of run-out present in the roll. The longer the chalk mark the smaller the run-out.

The best and most accurate method of checking roll run-out is with a dial indicator. Picture 1 illustrates the method of checking run-out with this instrument. The dial indicator is brought into contact with the surface of the roll in such a manner that the stem or plunger of the indicator is pointing *at the center* of the roll. The indicator is held firmly by means of a magnet or bracket while the roll rotates at the regular speed.

If the roll is concentric then the indicator hand or pointer will sit still and not move, except perhaps for a little vibration due to the flutes in the roving or spinning roll. If the roll is eccentric or off center, then the hand of the dial indicator will move to indicate this condition.

The swing of the hand (from low to high) is read in thousandths of an inch and this figure is the run-out as shown at "b" in Figure 2. The run-out is twice the eccentricity.

The device for holding the dial indicator differs with the applications. The device* illustrated in Pictures 1 and 2 is designed for use in checking the run-out of either top or bottom rolls in position and running on the roving or spinning frame.

The holder consists of the dial indicator, an adjustable handle, and a magnetic base. This magnetic base is strong enough to hold the

*Developed by West Point Mfg. Co. it is now made and sold by Custom Scientific Instrument, Inc., Kearny, N. J.

device in place on the roller beam while a reading is being made as shown.

The device on the left in Picture 2 is used on conventional frames, whereas the instrument on the right is used on such frames as the Gwaltney spinning frame.

The devices in Pictures 3 and 4 are used for checking the roll run-out of top rolls prior to installing them on the roving or spinning frame. The roll in Picture 4 is placed between two centers (male or female as may be required) and one or more dial indicators used to indicate the run-out of the part or portion of the roll in question.

With the instrument shown it is possible to check several points simultaneously for run-out. This device may be used to check the run-out of either the bare arbor or of the arbor with the cots in place and after buffing. It is most important that the centers in such a checking fixture run very accurately (or that they have no run-out in themselves).

It is also possible to build a simple device (Picture 3) for checking top rolls while the ends are mounted in vees instead of on centers. The vees should bear on the end gudgeons of the top roll and the indicator should rest against the cot or boss of the roll. This inexpensive device may be made in any mill shop.

The job of checking for roll run-out is a rather quick and simple one. Top rolls can be checked periodically when they are being buffed as a check on the buffing machine settings. This procedure prevents buffing and installing a large number of off-center rolls and thus avoids the resulting poor quality yarn that would come from these rolls with excessive run-out.

Why is roll run-out important? The importance of roll run-out has been investigated by a number of research organizations. The Shirley Institute of England published information on the effect of roll run-out in 1950-1951 (and at later dates). Research work at the West Point Manufacturing Company has led to a better understanding of roll run-out and of its effects in that group of mills, at least.

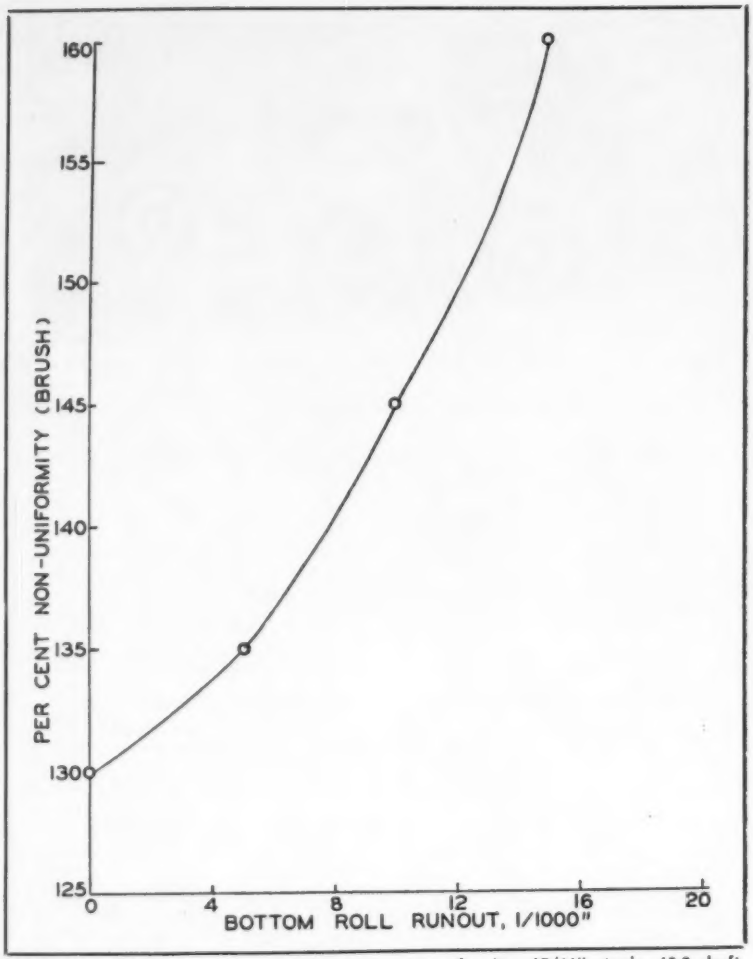


FIGURE 3. Effect of bottom roll run-out on yarn uniformity—15/16" staple, 13.2 draft.

Roll run-out results in two things:

1. The angular velocity (i.e., the speed of rotation of the roll) varies throughout one revolution of the roll.

2. The nip of the rolls moves back and forth from front to back.

Tests have been run to determine the relative effect on quality of each of the above two effects. In general, the variation in angular velocity results in a variation in the speed of drafting of the fibers when the run-out is present in the bottom roll.

When the run-out is present in the top roll the effect of the variation in angular velocity is less critical because the bottom roll is the drive and determines the drafting speed.

The effect of the second factor (i.e., the nip movement) is important when considering run-out in the top roll or in the bottom roll. If run-out is present in the top roll, it also causes a movement of the nip (back and forth). If the bottom roll has run-out it causes the nip to move back and forth, and also causes the drafting speed to vary (because the surface speed varies directly as the radius from the true center of rotation).

The result of the above effects is to cause *drafting waves* to be introduced which contribute to, or increase, the unevenness of the drafting process and consequently decreases the uniformity, strength, and quality of the roving and yarn.

The magnitude of the effect of roll run-out depends on several things:

1. The draft being used—the higher the draft the more critical the run-out.

2. The staple length of the fi-

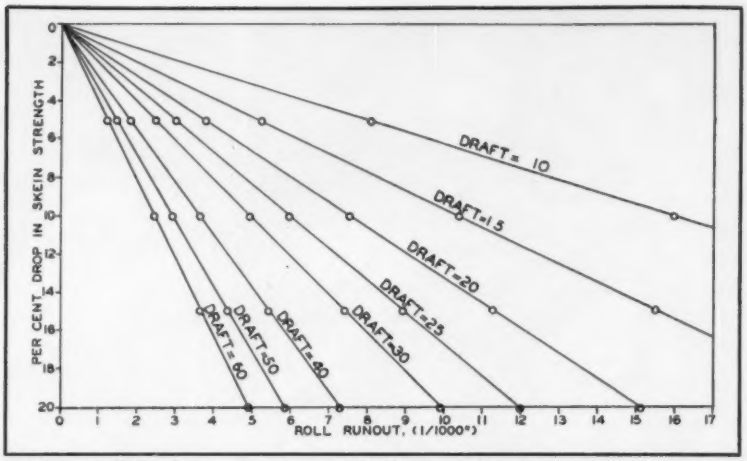


FIGURE 4. Effect of top roll run-out on skein breaking strength of yarns made of 15/16" cotton. The same severity in bottom-roll run-out causes slightly greater strength loss.

bers—the longer the staple length, the less critical is the run-out.

3. The diameter of the roll—the smaller the roll diameter the more critical is a given run-out.

4. The type and kind of fiber being drafted—the cohesion of the strand being drafted is, perhaps, a factor.

5. The magnitude of the run-out —the greater the run-out the greater the damage to quality and strength.

6. Some research results seem to indicate that the fewer fibers there are in the roll nip, the more critical the roll run-out. There may be some debate as to the relative importance of draft and of the number of fibers in the nip. It may well be that both are factors and that the higher the draft and/or the fewer the fibers in the nip, the more critical the roll run-out becomes.

As an example, on a cotton spinning frame with a draft of 20 and with 15/16" cotton and a 1" bottom front roll, it was found that a run-out of .007" caused a 10% loss in skein strength. This is about the same loss that would occur due to a 1/16" decrease in staple length, or due to an 8,000 psi drop in Pressley fiber strength.

The unevenness or non-uniformity would also be increased about 10% (e.g., from 130% N.U. to 140% N.U. on Brush uniformity analyzer). The effect of roll run-out is also apparent if the yarn is wound onto a blackboard. Run-out introduces distinct patterns into the boarded yarn.

The curve in Figure 3 is to illustrate the effect of bottom roll run-out on yarn non-uniformity readings. The curve gives the results of four tests with different values of bottom roll run-out on 15/16" cotton with a draft of 13.2.

The curves in Figure 4 indicate the approximate effect of roll run-out on skein strength at different values of draft. The values given are for bottom rolls. The loss in skein strength due to bottom roll run-out is even greater (some 10% to 20% greater than the figures on the chart).

It must be kept in mind that the values in these two graphs will not apply to all spinning systems, drafts, yarn sizes, fiber lengths, and roll diameters. The six most important factors which affect the importance of roll run-out are indicated above and their effects will vary from mill to mill. The point is this: Roll run-out cannot be ignored if a mill is interested in producing quality yarns.

The more quality-conscious machinery builders and roll manufacturers are aware of the importance of roll run-out and usually supply rolls within reasonably close tolerances for run-out. The actual figures may vary a little from one manufacturer to another, but in general, the rolls are furnished with from .0015" to .003" maximum run-out on the front rolls. The second, third, or fourth line of rolls is less important since the draft is lower and the manufacturers usually allow up to .004" or .005" maximum run-out on these rolls.

It must be remembered that the *average* roll run-out will be much less than the *maximum* run-out. One manufacturer points out that when the rolls are made with a maximum run-out of .003", about 70% of the rolls will have less than .002" run-out.

The importance of roll run-out is an indication that the textile manufacturing processes have progressed and are progressing in the direction of producing better and more uniform yarns and fabrics than in the years past.

Whenever such variables as roll run-out are evaluated and brought under control the whole textile manufacturing process moves into an area of better control and there will be fewer "mysteries" as to why one mill runs one way and another mill runs differently. When all variables in two different mills are controlled so that they are the same, then the two mills will run the same, and the old saying that "every mill is different" will have lost its meaning.

New color effects for fiber glass fabrics

■ A PROCESS through which multiple colors and unusual texture and pattern effects can be achieved on 100 per cent fiber glass fabrics has been devoloped by Hess, Goldsmith & Co., a member company of Burlington Industries.

The development of the new process on a commercial basis represents a major break-through for decorative fiber glass fabrics, according to William F. Colton, vice-president and sales manager of the company's decorative fabrics division.

Up to this point, fiber glass fabrics for curtains and draperies available to the consumer were limited to a restricted number of solid colors and to prints, Mr. Colton explained.

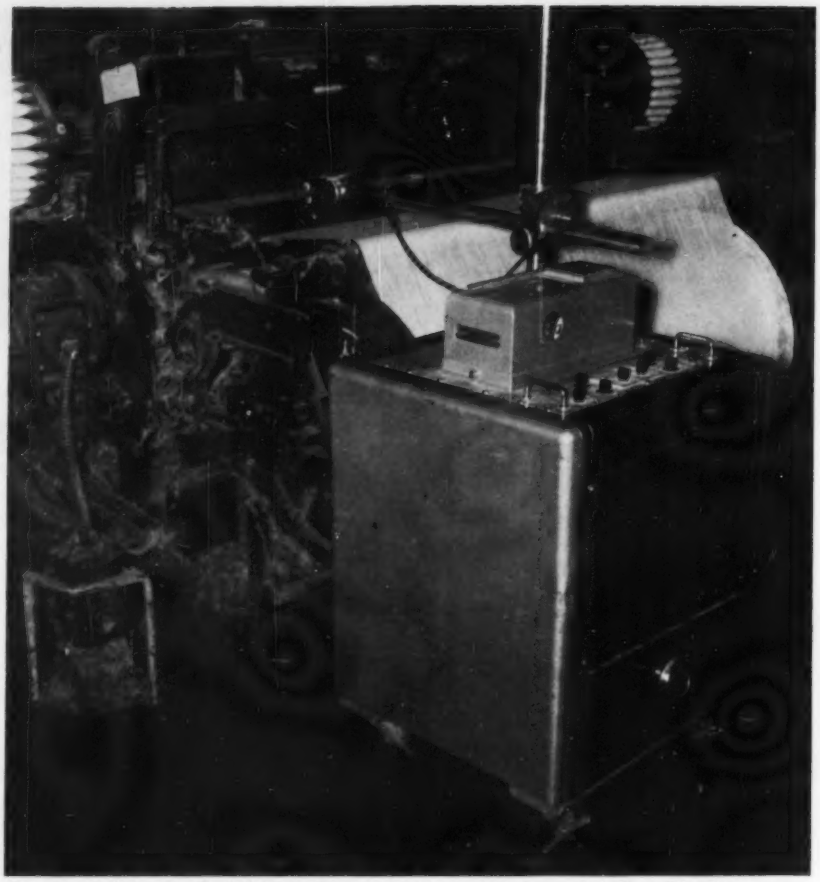
The company will apply its trademark—"Dy-Cor"—to products produced by this new process.

Multi-color effects are achieved on 100 per cent glass fabrics — two depths, or tones, of one color or two completely different colors—by induced selection of pigment colors. In addition, the process enables production of variegated coloring effects in designs planned to accentuate the texture of the fabric.

Method a weave room supervisor uses to more

quickly find loom-stop causes

Reading the warp tensions on running looms discloses many bad-work symptoms, leads to higher output



The instrument can be wheeled to the loom and set to read and record single-end tensions.

Staff prepared Exclusive

LOOM STOPS often build up slowly from a number of causes until the difficulty has compounded into a major problem. Knowing definitely that his looms are mechanically right and properly adjusted eliminates a major headache and source of trouble for the supervisor.

The supervisor in one modern mill has a positive means of determining loom condition. The mill has a program of inspection on each loom, and a portable instrument for recording yarn tensions is used in the program which has effected a 15 per cent reduction in loom stops. A single warp end is checked at a time.

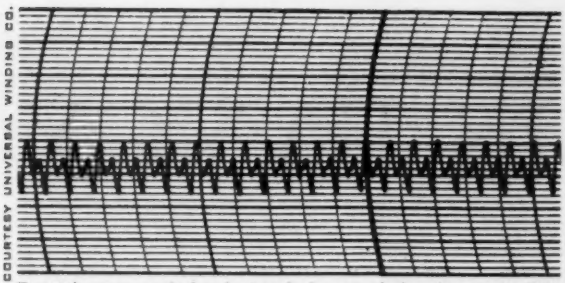
Quality control personnel and competent fixers work as a team to analyze the tension patterns in the warp of each loom. Experience with poor and good running loom patterns permits quick identification of worn parts or improper adjustments directly from the tension pattern given by the charts. Corrective action is undertaken without delay.

Mill personnel learned to identify quickly the more common causes of loom stops after two months of experience. Although new and different patterns show up on the charts occasionally, corrective measures become relatively easy. Now the mill is correcting loom stops more rapidly than by the old method where a fixer merely made one adjustment after another until he chanced upon the source of trouble.

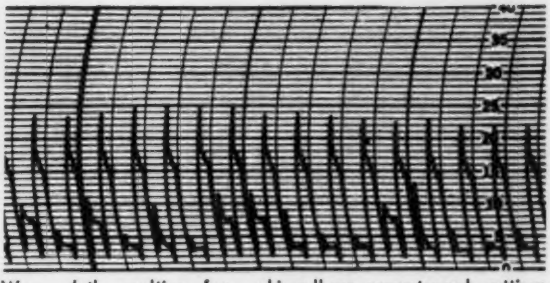
Each cause of a loom stop usually has its own peculiar characteristic which shows up on the tension chart; the team with experience can go almost directly to the source of trouble and correct it without making a lot of unnecessary adjustments. Also, they use the instrument immediately afterward to determine positively if the trouble has been corrected. This procedure eliminates the old waiting period after each change for sufficient production to see if loom stops are better or worse than before. Filling tensions can be recorded by mounting shuttle and using special attachments.

The accompanying charts illustrate graphically and dramatically the story told by the analyzer. Any troublesome loom calls for examination and testing by moving the portable instrument to the location as soon as practicable.

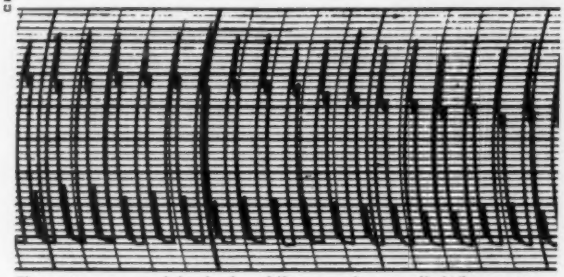
CHARTS COURTESY UNIVERSAL WINDING CO.



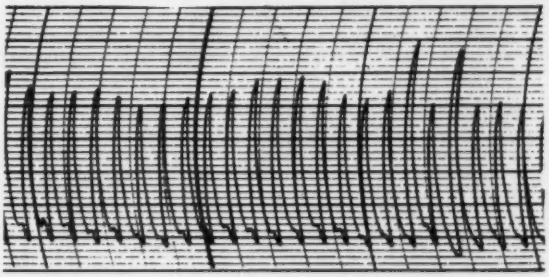
Too-tight warp ends break; too-slack ones chafe—this warp's O.K.



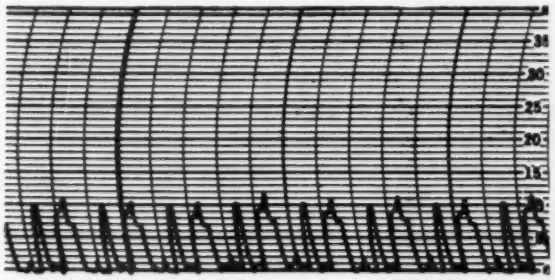
Wavy cloth resulting from whip-roll-arm-connector-rod settings



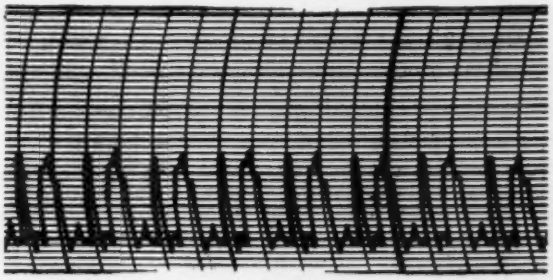
The pattern caused by broken fillet on take-up roll. When patterns similar to this occur, check out complete take-up motion.



Peaks were registered by weak harness springs allowing harness to bounce when pulled down—wavy cloth due to beam follower setting.

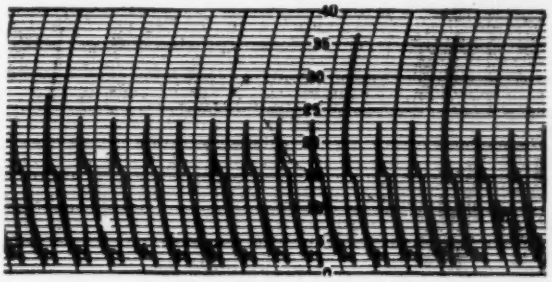


Zero-tension pattern at harness crossing—much chafing results . . . .

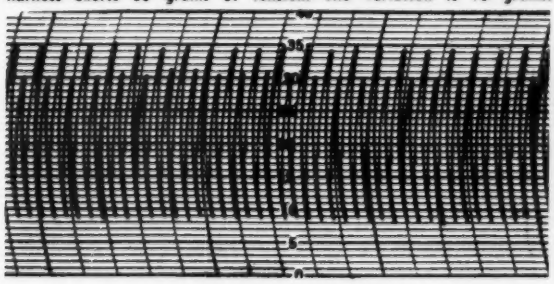


Changing harness timing and vibrator cam upped tension, output.

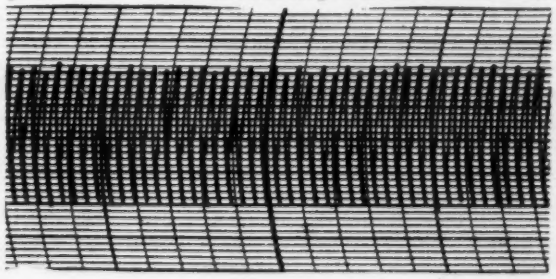
The high peaks suggest malfunction in harness motion, although a knot or a large slub passing through a fine reed can cause a similar pattern. So, check carefully before replacing worn parts.



A pattern of a loom set up from a level warp line. When harness is up the chart reflects a high of 70 grams. When lowered, the harness exerts 60 grams of tension. The variation is 10 grams.



The same loom represented in the chart at left with the harness set up by instrument. Upper limit has been lowered to 62 grams. With the lower limit remaining 60 difference is now two.



SHRINK FOR FANCY

Thermoplastic fibers such as polyethylene and polyvinyl chloride shrink considerably when heated. Here's how to use them to make novelty yarns on conventional twisters.

by P. Abbenheim
Exclusive

FANCY YARN production is normally a highly skilled technique limited to the few firms prepared to take the necessary trouble to process such complicated and expensive products.

Today, however, the situation has been changed through a development by D. Young and J. L. E. Seidler at Leeds University in England who have evolved a method of making certain fancy yarns on conventional twisting equipment.

The new system, as expounded by the inventors in their patent applications, is also much faster than the old one since it does not call for spasmodic yarn feed or other complicating and slowing features. The new yarns produced by the Young-Seidler system have a random irregularity, and although there is a limit to the number of yarns that can be made by this new method, as well as other drawbacks, there are also several distinct advantages.

HIGH BULKING with staple acrylics is now a firmly established system and the new method is similar to this, but principally with filament yarns. Two yarns are twisted together; one of the yarns will shrink when heated, while the other remains substantially unaffected by the heat. The plied yarn is then treated with heat so that the thermoplastic component shrinks, thus producing a fancy yarn. The inventors point out that any yarn can be used for the core, provided it will shrink by more than 30% after heat or chemical treatment. It must, however, retain its strength after treatment, since it will be the core that will eventually have to take any tensile strain to which the fancy yarn is subjected in further processing or in after-use.

Work at Leeds has, so far, been largely restricted to polyethylene and polyvinylchloride core yarns, since these appear to give the most satisfactory results, and either dry or steam heat can be used equally effectively with them.

During processing for relaxation and shrinking, the yarns are placed in a suitable chamber in hank form, on softly-wound packages or on collapsible tubes. It is also suggested that it might well be possible to pass the yarn through a heating zone while winding it from one package to another, thus achieving continuous processing.

If desired, more than one core or effect yarn can be used and there can be more than two twisting operations, depending on the effect required. The nonshrinking component in the yarn coils spirally around the contracting core.

Degree of coiling and intensity of effect will, of course, largely depend on the amount of core yarn shrinkage. With high-shrinkage core yarns, the coiling might be considerable and this will be reflected in looping on the surface; while if a low-shrink core is used a spiral yarn might well be produced. Depending upon the amount of shrinkage and the types of yarns used, a very interesting range of yarns may be produced, some of which will simulate conventional fancy yarns, while others are quite new in character.

TWISTING may be carried out in one or more operations according to the effect desired. Either S or Z twist can be used when twisting of shrinking and nonshrinking component yarns is done in one operation. Subsequently this plied yarn may be twisted in either the same or opposite direction with a binding yarn.

Two plied yarns, both containing at least one of each type of component, may be twisted together in the same or opposite direction. The second plying may take place either before or after heat treatment.

As mentioned above, there are really four ways of making the yarn and applying the heat treatment. The first is to wind the yarn on collapsible tubes, which avoids winding after twisting, but the tubes are scrap after this method and rewinding is necessary after heat treatment.

If it is decided to wind loosely on soft packages, each of these has to be small to allow for shrinkage, which must not be restricted and which must be even throughout the package.

In the hank relaxation method, rewinding is still involved, but this system has the great advantage of producing exceedingly satisfactory yarn and it is also possible to undertake dyeing simultaneously.

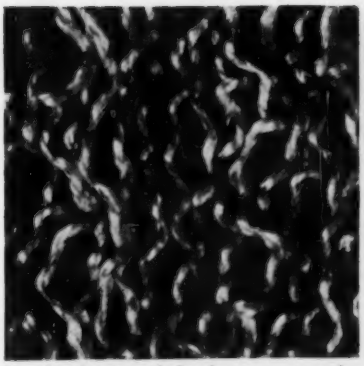
Continuous processing is still theoretical, but if successful it could prove to be the most satisfactory system. Experience with the production of false-twist yarns, etc., which use heating units, makes it quite conceivable that

*Fabrics utilising the high shrinkage of polyethylene to produce three-dimensional effects are being produced commercially in the United States by several companies; see TEXTILE INDUSTRIES for February, 1956, pp 150-151, and Aug. 1958, pp 107-110. —The Editors.

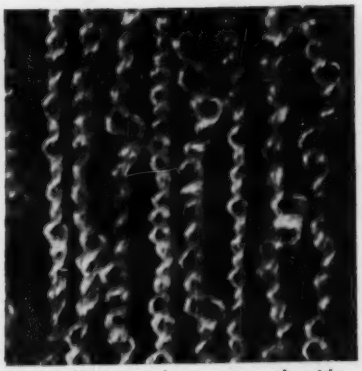
satisfactory equipment could be evolved.

Nothing has yet been done to see if chemical shrinking treatments could be used effectively, but here the problem of yarn deterioration must be faced.

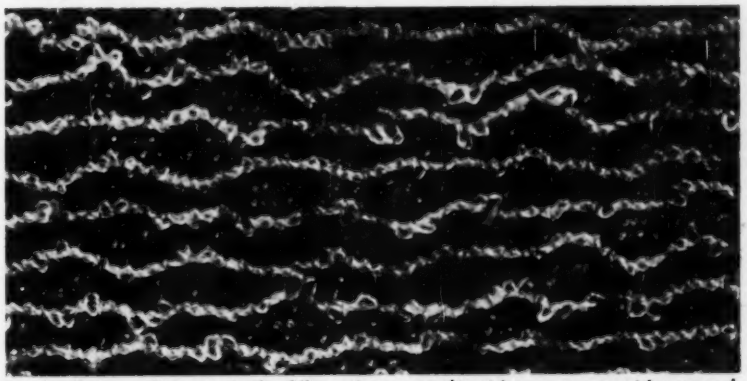
It is, of course, possible that such doubled yarns could be treated after being processed into either woven or knitted fabrics. This will naturally involve shrinkage factors of a magnitude associated with hibulk processing. Similarly it will be important to make open structures such that contraction will be able to take place effectively and without producing stiff fabrics with an unpleasant hand. The more open the fabric structure the more effective will be the final appearance of the cloth structure and texture.*



Sample of yarn made by the new process developed by researchers at Leeds University.



Boucle effect in a fancy yarn made with a two-ply thread over a polyethylene core.



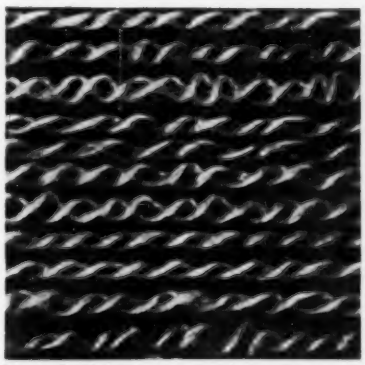
Boucle-effect novelty yarn in the filling gives a novelty stripe on a warp-stripe ground.

TWO GROUPS of yarns are suitable for providing the shrinking cores for these new yarns; these are made from polyethylene and polyvinylchloride fibers. If unhampered these fibers will, when heat treated, shrink to less than half their original length. When plied with other yarns, the contraction will depend in some degree upon the relationship between them and these other yarns.

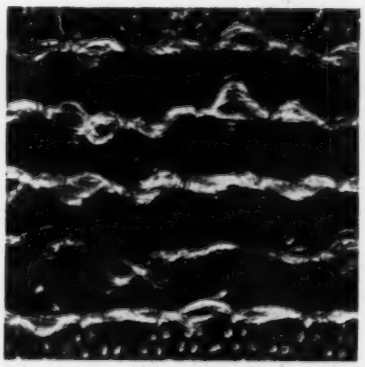
Evaluation work has been undertaken with the polyvinychloride fibers Rhovyl, Fibravyl, and Thermovyl (made by Societe Rhovyl S.A., France); Rhovylon (a Rhovyl/nylon blend yarn); and the polyethylene yarns Courlene and Courlene X 3 (Courtaulds Ltd., Britain).

Although the pvc yarns have a greater shrinkage than the polyethylene, and although they remain stable at higher temperatures, they do, after heat treatment, have a tendency to become elastic and lose their power of recovery.

The polyethylene yarns have the disadvantage of having a lower melting point than those of the pvc group.



The polyethylene core can be seen running through the center of this three-ply yarn.

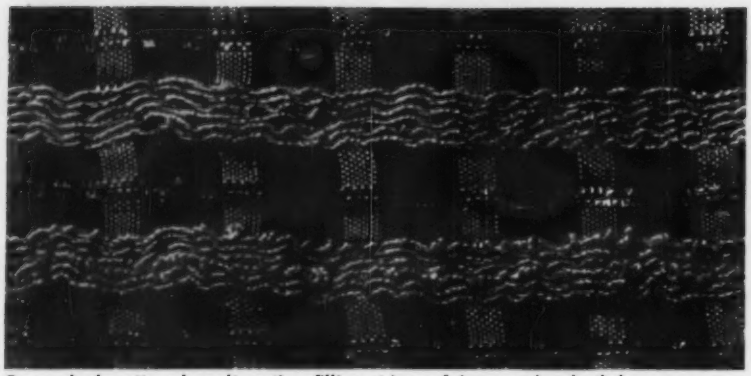


Effect yarn in filling shows clearly against alternating ground filling stripes.

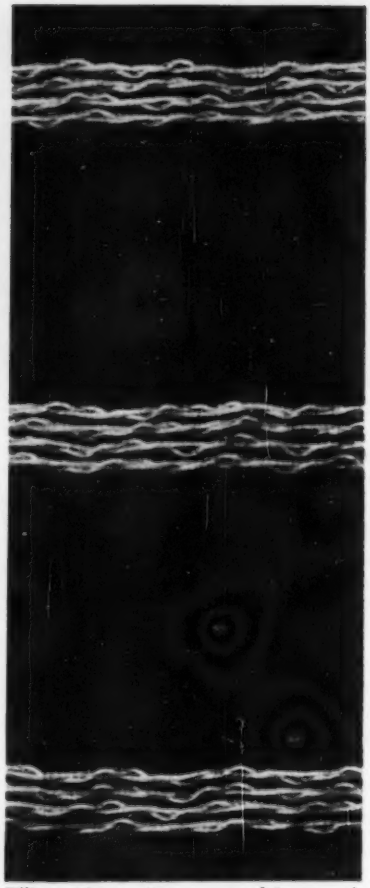
Courlene has a melting point of about 115 C, and that of the X3 type is above 135 C, but both yarns are very strong and have good elastic recovery.

One of the difficulties facing the British inventors is the production of Courlene, which is at present only available as monofilament, which has little grip on the effect threads, the only force holding them together being the twist. Rhovyl pvc multifilament and Fibravyl pvc staple are much better in this respect, the staple being most satisfactory. Monofilament also has the disadvantage that it is stiff and has a hard handle which is accentuated after heat treatment.

The view of the inventors is that the ideal would probably be a fine-denier-per-filament spun sta-



Fancy check pattern has alternating filling stripes of Lurex and polyethylene core yarn.



Filling stripe pattern on a plain ground. The magnification is about three times.

ple yarn made from Courlene X3 fiber.

EIGHT FACTORS are cited which govern the final characteristics of these new yarns. They are:

The count of the core yarn—a thick monofil polyethylene shrinks more at the same temperature than a fine one;

Type of fiber and count of yarn used for effect—the more rigid the fiber the more likely it is to produce loops;

Relationship between inner and outer yarns—the coarser the effect yarn in relation to the core, the less will be the final shrinkage, since the core has to bear the work load, but this coarser yarn will, of course, give more cover;

Potential shrinkage of the core yarn which depends upon the temperature to which it is exposed and the time it is heated;

The number of core and effect yarns twisted together;

The number of turns per inch and the direction of twist of each component, and the final turns per inch inserted and their direction—the more turns the less shrinkage, but with less twist the greater is the thread slippage. A balanced twist depends upon the counts of yarns involved and their count ratios—this is undoubtedly a major factor in producing these new yarns;

Twisting tension of the component yarns and the final yarn. The higher the tension on the core during twisting the more it will tend to lie down the center of the doubled yarn and, simultaneously, the more grip it will exert on the effect component. The lower the tension on the effect the more it will tend to give a boucle. Although a lightly tensioned yarn over a tight core gives a boucle before heat treatment, the heat treatment emphasizes the effect;

Number of twisting operations to make the final yarn.

Taking into account all the above factors it should be possible, after effective evaluation work, to predict the resultant count and type of yarns produced by different methods.

It is quite evident, though, that there is still considerable work to be done before a complete range of yarns and effects can be quoted.

Industrially it seems that the new system has much to commend it although work is still progressing in an English throwster's mill to see just how commercially attractive the system is.

AFTER PROCESSING into a fancy yarn the core yarn is, of course, only stable up to the temperature used to produce it initially. It is important that after heat treatment the yarn should be able to withstand processing tensions, but with pvc filaments and fibers this requirement is not fully met.

Whether improved polyethylene filaments and fibers will be produced by the new processes such as the Zeigler and the Philips remains to be seen, and if such are made then obviously if the melting point can be materially raised the only remaining objection to the widespread use of polyethylene as the contracting core will be removed.

Thread slippage of the effect yarn twisted over the smooth core is a disadvantage, but it also contributes to the random irregularity of the resultant yarn and this is predicted by the inventors as a major selling point. Staple pvc fibers enable a good random effect to be obtained, and they also minimize thread slippage. This problem of thread slippage is eliminated almost completely once the yarns have been manufactured into a knitted or, more particularly, a woven structure.

IT IS CLAIMED that by the new method it is now possible to produce certain fancy yarns in finer counts than by conventional methods. For example, a loop yarn, conventionally made, will require at least four components, while by

this new method it can be made on an ordinary twister in two or, at most, three passages if slippage is to be eliminated.

Although not all fancy yarns can be made by the new method, Young and Seidler point out that it is possible to make new yarns which cannot be made on fancy twisters. Filament yarns, for example, with flat cross sections can be utilized to produce new novelty effects.

Polyethylene does not dye easily and certainly not by normal techniques. It can, of course, be pigmented in the melt before extrusion to give spun-dyed filaments with high degree of fastness. Since it is virtually transparent it has been found in practice that this handicap of nondyeability is not really serious. Similarly, the harsh handle of coarse monofil can be minimized by making sure that it is well covered by the effect component.

Multifilament and staple fiber structures give a more pleasant handle and, since these have so far been pvc fibers, they can be dyed.

The inventors conclude that, while the ordinary firm manufacturing ply yarns can now make highly novel and effective fancy yarns, the fancy yarn manufacturer need not fear this new development, since it will enable him to widen the range of fancy yarns he is able to offer and, with his previous skill and experience in manipulating the traditional fancy yarns, he stands in a good position to benefit from the new process.

Cotton properties-to-grades relationships reported

■ A REPORT recently published by the United States Department of Agriculture* shows by averages the relationship of various measures of cotton fiber and processing properties to the different grades, and by ranges the extremes in the fiber properties in each grade classification for the 1956 crop.

Also provided in the report is supplementary information to the annual cotton quality studies—quality evaluations on a wide range of grades and staple lengths are presented instead of being limited to modal qualities as previously published.

The wide variation in fiber properties within each grade included in this report reduces in most instances the significance of the differences between the grade averages.

Some of the trends found in the averages of the data on white grades in the statistical tables are as follows:

Length. Cotton classed into the higher White grades in 1956 averaged longer than that in the lower grades as measured by the classer. The average Fibrograph upper half mean length was also longer for the higher grades than for the lower grades, but the relationship was less pronounced than it was for the classers' length. The fiber length as indicated by the Fibrograph was also less uniform in the lower grades than it was in the higher grades.

Micronaire. Fineness as measured by the Micronaire averaged much higher in the higher grades than in the lower grades. But fluctuations in Micronaire values for different cottons of the same grade were wide, and a high grade cotton is certainly no positive assurance of high Micronaire reading.

Strength. Average fiber strength index (1/8-inch gauge) for the White grades declined slightly as grade decreased. Fiber strength for cottons in each grade varied considerably but was more uniform within each grade than for the other properties measured.

Nonlint Content. Trash is, of course, a grade factor, and the Shirley Analyzer nonlint measurements increased from the high to the low grades. The average percentage of nonlint content was less for cotton classed into the various grades of the 1956 crop than was found in earlier years. This was particularly true in the grades below Strict Low Middling.

Picker and Card Waste. Average picker and card waste increased from 7.0 per cent for Strict Middling to 10.8 per cent for Low Middling cotton.

Neps. The average number of neps per 100 sq in of card web tends to increase as grade decreases.

Yarn Appearance. The average yarn appearance index declined appreciably as the grade decreased. The average for cotton classed as Strict Middling was 105 and for Low Middling 95.

Yarn Strength. Yarn skein strength of 22s yarn decreased only slightly with decreasing grades. For Strict Middling and Middling the strength of 22s yarn averaged approximately 116 pounds against 110 pounds for Low Middling.

Finishing Properties. The color index of yarns made from different grades of cotton in 1956, measured in the grey and dyed (after bleaching), declined sharply and consistently with successive decreases in grade.

Colored and Split Grades. Both spotted and light spotted cotton showed the same general tendency of diminishing fiber and spinning quality with decreases in grade, as did the White grades. Although the light spotted cottons showed a higher level of spinning and finishing properties than the spotted grades, neither the spotted or light spotted cottons were equal to the corresponding White grades in spinning and finishing performance.

Gray and light gray cottons were generally inferior to the corresponding White grades. Even for nonlint content and picker and card waste, the gray cottons were down the equivalent of one or two grades. Other fiber properties averaged on a level with that of Low Middling or Strict Good Ordinary. Light gray and gray cottons were also on a lower level than the white grades in spinning performance, while the finishing tests on these cottons were decidely inferior.

Cottons classed into the split grade "plus" were in most instances slightly superior in fiber properties to cottons of the base White grade. Generally the plus grades had fiber properties that fell between the base grade and the next higher grade. There was considerable improvement in spinning performance over the base grade for plus cotton. Finishing test results of these cottons indicated that for the most part they were comparable in bleaching and dyeing properties to the next higher grades, which they matched in color.

*"Cotton Fiber and Processing Properties as Related to Grades," AMS-278 (October 1958).

Starting a quality control program

A mill-proved, step-by-step approach to a sound quality control program

by Norbert L. Enrick
Institute of Textile Technology
Exclusive

A PRODUCT noted for its quality is not produced by accident. It is the result of careful planning and control and good over-all management. Quality, like cost, is thus a measure of the success of management operations as a whole.

A sound mill quality control program assures that for a given product cost, and a relative minimum of control costs, a yarn or fabric of optimum attainable quality is produced. A product which becomes known for its consistently superior quality/cost ratio thus becomes a more salable product.

The means of attaining these objectives are outlined below, after examining the essential aspects of modern quality control, as developed in recent years (1, 2)*.

What Makes for Good Quality? Three principal factors are usually the determinants of good quality. First there is the *design*. A design which is adequate, useful, workable, and attractive is usually the result not only of creative imagination, but also extensive study, planning and research.

Quality is also an expression of *workmanship*, reflecting the pride and skill which go into each processing operation. It is directly related to the quality-mindedness which pervades the plant. Where incentive systems incorporate quality considerations, and employee selection, placement, and training are based on carefully worked out programs, mill management's job of instilling quality-mindedness is greatly facilitated.

A third aspect of quality, *uniformity*, has become appreciated only in recent years. Perfect uniformity is generally unattainable, because of variations in raw materials, humidity, machine wear and vibrations, and similar factors. These variations can be controlled within normally allowable limits.

Other deviations of product may be due to some definite cause or "trouble" in the manufacturing process. It is in the maintenance of uniformity where modern quality control becomes important.

The three factors affecting quality of product are summarized in *Table I.*

Statistical Quality Control. In order to maintain the closest control practically feasible over product variations, a modern quality control program provides tests and inspections at strategic points in manufacturing, from raw material to finished product. Insignificant or normally expected fluctuations may be ignored, but test results showing unsatisfactory conditions or "trouble" are brought immediately to the attention of the operator, his supervisor, or both. In this way, defective output is caught quickly and can be corrected with a minimum loss of time.

Statistical quality control has earned itself a special place in this work, by providing sampling plans which keep the risk of sampling error to a minimum. In addition, control charts may be employed, which are often capable of predicting that a process is about to go "out-of-control" before actual off-standard product has been produced (3, 5).

Quality and Costs. Modern quality controls will not only improve product quality, but also aid in reducing processing costs. This fact becomes apparent when one considers that with controlled production there will be less off-standard output, less waste, fewer ends-down and loom stops, and

*Numbers in parentheses are references at the end of this article.

fewer short-ends and seconds to sell. Thus the axiom that "higher quality means higher costs" can be proved untrue in the mill which keeps proper quality controls.

Given identical raw materials and equipment, the manufacturer who has these controls in his processing is likely to end up with a product of higher quality and lower costs than the competitor who neglects controls and leaves costs, machine efficiencies, and quality to "work out by themselves."

Although quality control in a mill improves quality, a distinction must nevertheless be made between an *improvement program* and a *control program*. Often management will invest in new machinery and equipment to attain higher productivity and improved quality. However, unless such improvement is tied with the proper controls, quality will soon begin to drift, particularly as regards hidden faults, and thus cause a tapering off of consumer acceptance. Thus the salability of a mill's product is closely associated with its quality control program.

Sometimes a mill faced with a sudden demand for higher quality will spend considerable effort on finished cloth grading, often doubling the number of grading inspectors. In this way, the mill's control system will act as a "traffic cop" by which inferior merchandise is sorted out and diverted to "less demanding customers," seconds, short-ends, or waste. Such an approach seems to be a costly solution to the quality problem, since *quality cannot be burled or mended into the cloth, but must be spun into the yarn and woven into the cloth.*

Attainment of Good Quality Controls. A good quality control program, based on the principles presented above, must consider raw materials, manufacturing requirements, and market demands. A step-by-step systematic approach towards such a control program, as proved in a large number of mill applications, is outlined below:

1. Initially, the mill should check its records, to see that a complete inventory of machinery and equipment is available, with up-to-date information on such machine characteristics as drafting systems, gearing, and constants. Next, data should be sought to show in tabular form the various change gears, speeds, package sizes, and other processing characteristics applicable as different raw stocks, yarns, and fabrics are passed through each machine.

2. Once management has before it, in neat and compact manner, the pertinent data on present machinery inventory and processing set-ups, possible means of improvement often become apparent. First of all, there may be certain minor changes of processing conditions which may lead to increased machine efficiency, higher production, reduced labor cost, and improved quality. Furthermore, there may be other changes, often involving expenditures of a considerable nature or involving long-term adjustments, which should be kept in mind for a long-range program.

3. It is well for the findings from Step 2 to be put in writing, possibly in the form of an "Attainment Program" listing:

a. Present conditions

b. Proposed immediate improvement programs

c. Possible future "long-range" programs

d. Work required, parts needed, and costs.

e. Estimated cost savings in production versus cost of the program.

4. After the "Attainment Program" has had a thorough review by all parties concerned, it is ready for exhaustive discussion and consideration of the pros and cons by mill management and supervision. As final decisions are reached a record should be kept of each major item, showing:

a. Date item was approved

b. Date requisite parts were ordered

c. Date parts were received

d. Date work was begun

e. Date work was completed

f. Results of check-ups on actual improvements attained

5. Concurrently with these steps,

TABLE 1. QUALITY AS A FUNCTION OF DESIGN, WORKMANSHIP, AND UNIFORMITY

	DESIGN	WORKMANSHIP	UNIFORMITY
QUALITY PROBLEM	How adequate, useful, functional and attractive is the design?	Does a sense of quality-mindedness pervade the entire organization?	Is product variability controlled within economically feasible bounds?
TOOLS OF ATTAINMENT	Fabric development Laboratory tests Field tests Customer surveys Market evaluation Market research	Employe selection and traing. Quality incentives Standardized processing Follow-up on complaints Quick correction of poor quality.	Analysis and reduction of process variability. Statistical sampling, testing and control. Thorough tests and inspections of outgoing product. Re-check grading.
GOAL	Useful & appealing styles	High quality, low defects	Uniform, reliable product

TABLE 2. OVER-ALL DESIGN OF YARN MILL QUALITY CONTROL

CATEGORY OF TESTING	COTTON SYSTEM Cotton, Staple	FILAMENT SYSTEM Synthetics	WOOLEN SYSTEM Wool, Synthetic Blends	WORSTED SYSTEM Wool, Synthetic Blends
RAW STOCK	Length Grade Strength Fineness Maturity Damage Variations	Denier Condition Strength Filaments Dye Index Variations	Length Grade Crimp Fineness Variations	Length Grade Crimp Fineness Oil Content Neps Variations
	PURPOSE: Check quality of raw stock and allocate stock to the most suitable yarns and fabrics.			
MACHINERY SPEEDS	Opening-Spinning Winding Twisting	Winding-Twisting	Dusting-Spinning Winding Twisting	Drawing-Spinning Winding Twisting
	PURPOSE: Assure that machine speeds stay set for best quality and production throughout the mill.			
MACHINE SETTINGS	Beaters Combs Rolls Pins Traverses Spacings	Tensions Traverses Spacings Alignments Rolls	Tapes Tensions Rolls Pans Alignments	Pins Combs Rolls Traverses Spacings Alignments
	PURPOSE: Check that all machine settings are maintained at standard so as to yield optimum performance.			
OTHER CHECKS	SIZING: Maintain standard yarn weights. EVENNESS: Assure even yarn, free from periodicities. RUN-OUT: Minimize defects from vibrating (run-out) rolls. PACKAGES: Maintain standard package sizes and handling. ENDS-DOWN: Check on running conditions of stock. PRODUCTION: Control efficiency of production. WASTE: Minimize avoidable waste of spinnable fibers.			

a routine testing program may be initiated, along the lines shown in *Table II*, and using standardized test procedures (4). After sufficient tests have been accumulated, regular testing schedules can be set up to check all machinery at definite cycles. The testing frequencies, as well as the standards and tolerances, are usually developed by the supervisor of the laboratory in consultation with mill management and supervision. Usually, agreement on what are practical and workable standards can be attained quickly where all facts and data on machinery, processing, and prior test results are available for review.

6. Next an off-standard procedure is put into effect. This incorporates the modern principle of "management by exception." This means that so long as test results are satisfactory, no report is made. However, if an actual test exceeds the allowable tolerance, and a re-test and re-check has ruled out sampling error or testing faults, an off-standard report is issued by the laboratory supervisor. This report shows the off-standard condition found, and goes to the departmental supervisor concerned, so that he can correct the trouble.

Only in those cases where the supervisor is unable to take care of the off-standard condition, or where the condition may be beyond his immediate control, is the off-standard report permitted to come to higher management's attention. This system avoids any suspicion of "snooping" and keeps down the paperwork and reports.

7. Working along control principles similar to those for quality, a method may be developed also for waste control, incorporating:

a. Proper weighing and classifying of departmental waste

b. Showing waste in percentage by category and department

c. Comparing actual waste against waste standards and tolerances

8. Definite schedules may also be set up for preventive maintenance of machinery. Here again, an off-standard procedure can control the performance of overhaul at the frequencies scheduled, and report sub-standard quality scouring or overhaul.

9. As these controls begin to function, the mill's finished cloth grading may be reviewed. With streamlined procedures and reports, it should permit management to evaluate at all times the level of quality prevailing for its various styles of fabric and to adjust standards for "first," "second," and "third" grade merchandise quickly in accordance with changing market demands. From an internal viewpoint, the grading records serve as important information for analyzing the types of defects that are occurring and taking ordinary and special corrective actions in the processing departments responsible.

Conclusion. From the facts presented, the gains from a well-run quality control program are apparent:

First of all, there will be improved consumer acceptance and marketability.

Second, there will be reduced waste and seconds.

Third, there will be a smoother flow of work and improved morale, as ends-down and loom stops are reduced.

Fourth, a more uniform and controlled output will standardize working conditions and facilitate the application of production incentives.

Quality control, if incorporated in a good mill program, thus contributes to lowered cost and a more salable product—for the best salesmen of your goods are the goods themselves.

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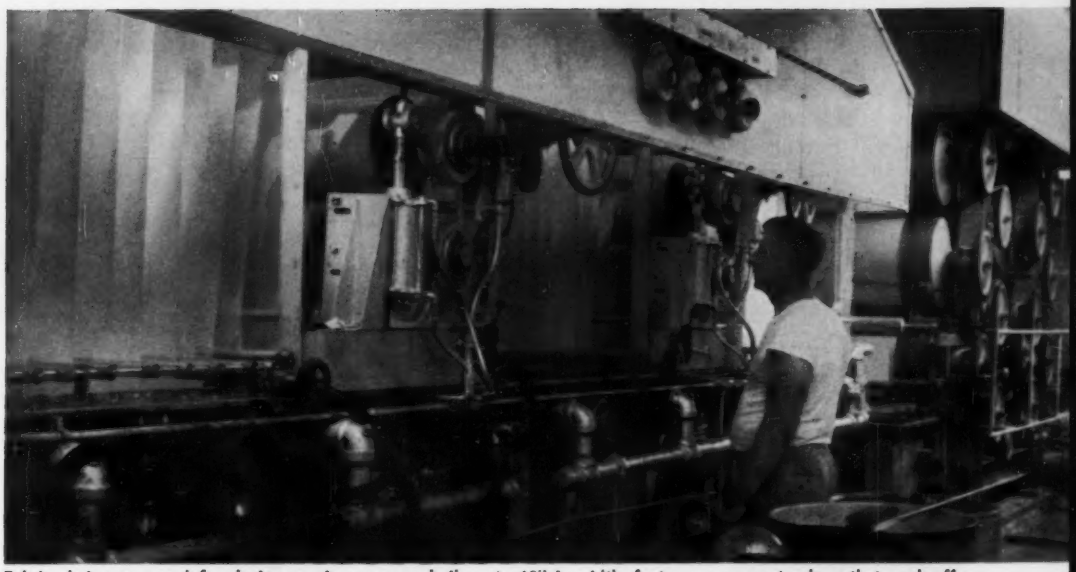
5. Heard, M. E., Research and Quality Control Pay Off, TEXTILE INDUSTRIES, 117, 97-108 (March 1953).



Fabrics being prepared for dyeing receive an open boil-off on this range that consists of a cloth scray and singeing unit (not shown), three soaping boxes, and a rinsing box. The range, which accommodates fabrics up to 60" in width, features compensator bars that work off d-c motors to keep cloth tension at a minimum. The drying cans are V-belt driven, eliminating the possibility of oil staining and reducing maintenance costs.

A predicted market change proved correct, so this firm moved to begin

Processing men's wear fabric blends

Staff prepared Exclusive

FOR a number of years Northern Dyeing Corporation of Washington, N. J., had as its specialties the finishing of rayon/cotton bengalines and failles, which were marketed in substantial yardages. Behind the consumer acceptance of these fabrics were sound processing techniques and modern, tension-free equipment.

But even during peak market acceptance of these fabrics management found no reason for complacency, believing that markets become saturated as competition grows keen, and that newer fabric developments tend to reduce market volumes of existing fabrics. When signs of declining markets did appear, indicating to Northern Dyeing Corporation that the time had come for diversification, management had already laid plans to enter the men's wear field.

What made the transition relatively simple, although it required modification of plant processing techniques, was modern equipment, purchased and assembled for processing man-made fabrics and blends. Along with this important prerequisite, however, was a plant and laboratory staff experienced in the application of many dyestuff classes, finishing resins, and water-repellents to meet the wide requirements of the men's wear market.

Among the first fabrics the firm took on was a cotton/nylon blend for men's rainwear. Of cross-dyed effect, it is water-repellent and dimensionally stable to drycleaning and laundering. Since this fabric was introduced by the company under its established Norfix trademark, the fabric line has broadened and now includes cotton/Cupioni shirting, cotton/dynel and rayon/dynel blends, and in growing volume the popular cotton/Dacron.

As the accompanying photographs and captions point out, the equipment (all for open-width

processing) features component parts which make for continuous operation and reduce downtime—cloth scrays and circular knife cutters for batching, to mention a few, and V-belt-driven, stainless-steel drying cylinders that not only eliminate oil staining but also afford quick replacement. Together with these physical features which also make for ease of operation, management policies call for weekly inspection of equipment and parts replacement, and an annual overhauling program.

Among the plant's new equipment, purchased within the last year, are two jigs for high temperature dyeing, which also afford tension-free processing, and a new compressive shrinking unit which features a 2⅝" rubber blanket. Francis Percarpio, operating head of the firm, states that the unit was purchased primarily for fabrics finished for the wash-and-wear field. Shrinkage requirements are met in two ways: a substantial percentage of dimensional stability is achieved on the compressive shrinking unit; the remainder with crease-resistant resins. In the case of the cotton/nylon rainwear fabric, which contains an all-cotton combed warp, a dimensional stability of zero shrinkage can be achieved.

The pad-roll dyeing machine on which the nylon of the cotton/nylon rainwear is dyed allows a near-perfect atmosphere to be maintained for the deep penetration of the dye molecule into the fiber. It consists of (1) a low liquor volume, (2) a relatively "soft" padder, (3) an infra-red heat maintenance zone, and (4) a completely enclosed, fully insulated dyeing chamber where the fabric is batched.

After the fabric is immersed in the temperature-controlled dye bath, it is infra-red heated to maintain proper temperature and thus prevent color migration. After batching, the chamber is disengaged and wheeled to a storage area where dye exhaustion and fixation take place for a period of three, four, five, or six hours under carefully controlled conditions of temperature and humidity.

During this time the cloth roll rotates slowly. Several dyeing chambers permit continuous operation of the unit, which lends itself particularly to dyestuff classes requiring a neutral steaming for exhaustion and fixation.

After the fabric is dyed in the above unit it is rinsed, squeezed, and dried (in a loop dryer) on a tensionless drying range. This unit features efficient air circulation, high temperatures (sufficient to cure resins), and an air looping device that blows a loop into the cloth. The fabric shrinks a small amount and is thus susceptible to less in-process shrinking during finishing. Additionally this relaxed drying makes for a loftier hand than is obtainable on regular drying cans.

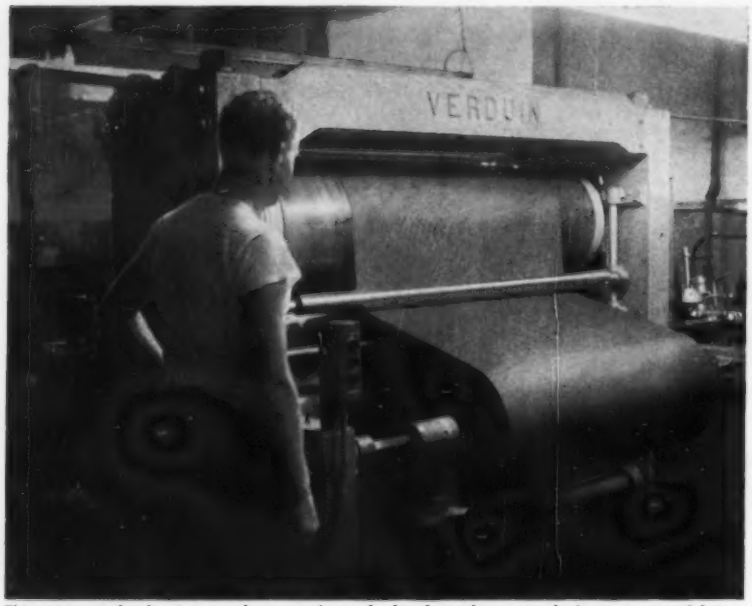
The dried fabric is then impregnated on a finishing range with the ingredients demanded by the fabric blend and usage, and is then dry-framed to width. Calendering, usually a last operation, is carried out on a 40-ton hydraulic used to impart luster and supple hand to the cotton/nylon rainwear.

In the last year, the corporation has been doing much developmental work in the application of fiber-reactive dyes on its pad-roll dyeing range that provides the required neutral atmosphere for proper color exhaustion and fixation. Results to date indicate that these dyestuffs, which offer good fastness properties, will be readily adaptable to continuous processing with attendant operating economies.

As an integral part of plant production, the plant maintains a laboratory which also has responsibilities in quality control. The laboratory's facilities include miniature dyeing equipment, which simulates production equipment and enables realistic shade matching. The laboratory is also instrumental in setting up processing routines for the new fabric developments that are now steadily coming forth.

Although fabric lots are tested before shipment, fabric pieces, representative of the company's production lots, are sent to the Better Fabrics Testing Bureau for further extensive testing. This provides a continuous check on the plant's testing results and gives the customer objective results as well.

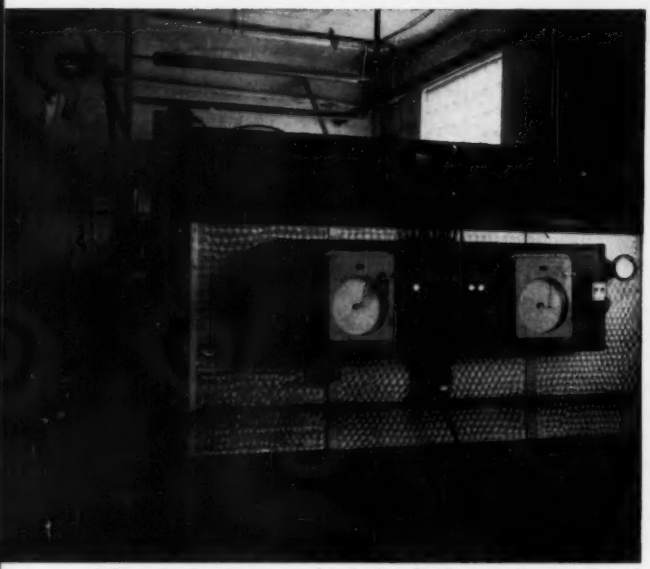
In today's rapidly changing market, National Dyeing Corporation's philosophy is to continually modernize with the view of finishing fabrics at a high rate of productivity to meet high quality standards of performance.



This 40-ton calender imparts luster and supple hand to the cotton/nylon rainwear fabrics.

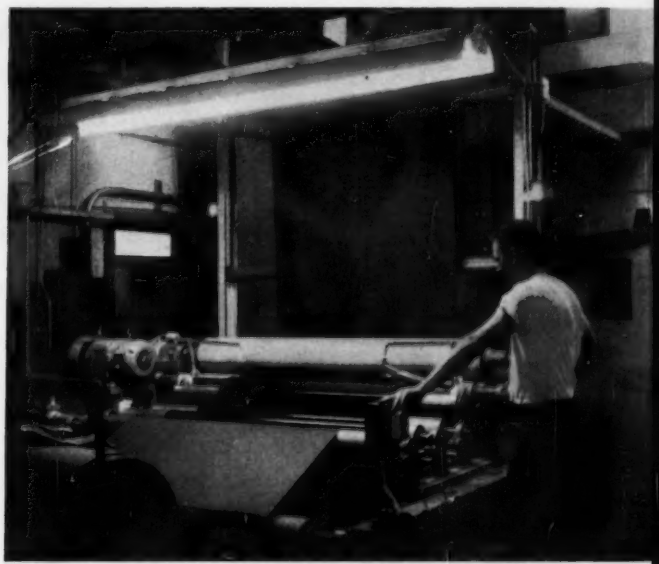
This component unit both desizes and singes, with the flames (arrows) under automatic control to prevent fabric damage when unit stops. Cotton/nylon rainwear (combed cotton warp) is first singed and is then impregnated in a desizing-cold bleach bath and left lying at least four hours before getting open soaping.

This pad-roll dyeing machine provides an atmosphere of controlled humidity and heat. In the case of cotton/nylon rainwear the cotton warp is dyed on tension-free jigs with selected sulfurs and vats. The unstained nylon filament is then dyed on this unit with nylon dyestuffs that meet outerwear fabric's fastness requirements.



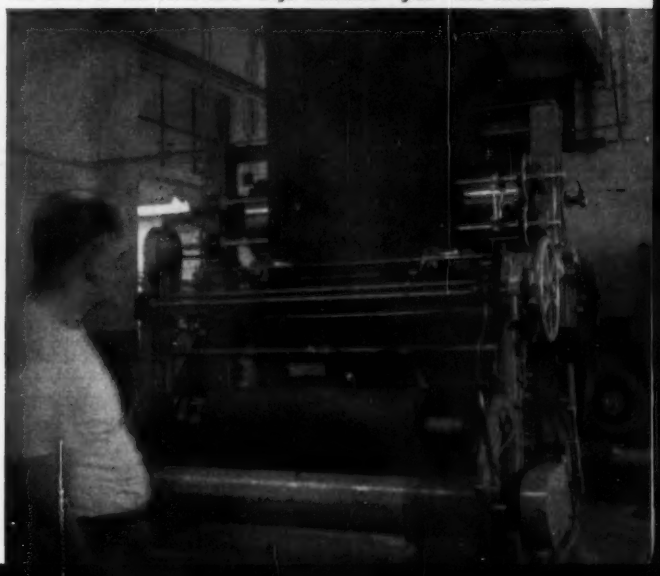
When the batch is completed the chamber is disengaged and wheeled aside for the dye exhaustion and fixation to continue.

Water repellents, etc., are then added on this finishing range.



Removed from the chamber to the left, the fabric is rinsed, squeezed and dried (in a loop dryer) on this tensionless drying range.

The drive of this roller-cure range minimizes "grab" and stretch.



Running hardened card wire?

Here's the experience of Alabama mill men with it and drop-leg or heavy package type flyers

With a busy day ahead of them (Maryland was present to play Auburn in the afternoon) the mill men began to gather early.

Staff report

THE ANNUAL fall meeting of the Alabama Textile Operating Executives was held in Langdon Hall on the campus of the Alabama Polytechnic Institute, Auburn, on October 25. General Chairman *Dwight Epperson* opened the meeting, which was devoted to problems in carding and spinning.

Calvin Warren led the carding session; *Virgil Redden*, the spinning session.

Discuss your experience with hardened wire on cards:

A. State whether hardened point wire was used on licker-in, doffer, and/or cylinder, and any other changes made.

B. Give effect of hardened wire on: (1) sliver quality; (2) shedding; (3) grinding cycle; (4) amount of smashes; (5) life of wire compared with regular wire; and (6) other effects.

Twelve mills reported no experience or too little experience to join the discussion.

With hardened doffer and cylinder wire *Mill A* has fewer neps but some increase in foreign matter. It is in good shape after five years of service, has given no smashes, hasn't shed, is ground once every 24 running days, and is vacuum stripped every eight hours.

One doffer at *Mill J* is so equipped, and the firm has noticed no change in sliver quality. The wire, installed in 1955, has done no shedding, is not ground, and has not smashed. Management feels that more time will be needed to compare it accurately with other wire.

There has been no shedding of hardened doffer and cylinder wire at *Mill K*. Ground every 1080 hours, the wire has done no shedding or smashing; management feels more time will be needed to compare its life fairly with other wire.

The hardened wire on doffer and cylinder at *Mill M* is giving 25 per cent fewer neps than did the wire it replaced. It is ground every two months and hasn't smashed to date. Here again, however, it is felt that it is too early for accurate comparisons with other wires.

Mill O reports very poor sliver quality from the card equipped with a hardened-wire licker-in. Chokes have been numerous; there has been considerable shedding. The firm feels that the wire is not as durable as the wire regularly used. No grinding is done. In short: "We found that this type wire was unsatisfactory, chokes faced the wire, making poor quality sliver."

No records are available at *Mill Q* on shedding, grinding cycle, and sliver quality from the card equipped with a hardened-wire licker-in. Management is of the opinion that smashes are fewer; there is less turned or hooked wire. The firm estimates the life of the hardened wire to be 10 years instead of the estimated seven years for regular wire.

From the standpoint of sliver quality and shedding *Mill T* reports good results from the hardened cylinder and doffer wire in use there. Smashes are "ordinary," and quality is improved on some synthetic fibers. It is too early for the firm to attempt to compare wire life with that of other wire.

Please discuss methods used to keep continuous check on bobbin builds and package weights on warp and filling yarns.

Eighteen mills answered this question and gave eighteen different answers. Each plant treats the situation according to local tastes.

However, there appears a pattern common to all—the plants make periodic checks whether by the standards department or by production personnel. Whenever a frame is changed so that bobbin build will be involved, the frame is checked out on the spot after

General Chairman Dwight Epperson of West Boylston Mfg. Co. opened the meeting. Executive committeemen and guests were on platform with him.

Calvin Warren of Russell Mfg. Co. led the carding discussion.

Virgil Redden of Tallassee Mills conducted the spinning forum.

the first doff to make sure that the package size is in keeping with the end requirements (shuttle sizes, spooling cycles, etc.,) and makes the best use of lay, taper, and ring size.

The most elaborate method is given by *Mill P* and is used to keep control of 289 warp frames producing yarns from 2.85s to 23s. " . . . All . . . are doffed on a schedule and the running time is determined by previous experience and studies to determine the maximum amount of yarn that can be spun of a given yarn number, bobbin size, and ring size. Also, tests were made to determine the proper lay and build of the package with consideration given to subsequent winding operations.

"We use one man to service the builders of these frames and to act as a 'trouble shooter' when changes are made that affect the build or package size.

"When the doffing schedule method is used, there are times when maximum package content must be sacrificed in order to maintain efficient doffer job loads. However, we are able to maintain more consistent package sizes and greater production due to less downtime from frames waiting to be doffed.

"The schedule man makes use of standards such as maximum bobbin content and running time of each yarn number when setting up doffing schedules and yarn changes. His services are coordinated with the production department and the spinning overseer in making changes. The builder man works closely with the overseer of spinning and the schedule man to see that the frames are correctly set to build properly after all yarn changes.

"The method of control of filling is somewhat different. Due to the multiplicity of styles that necessitate frequent frame changes, we cannot schedule doffing. Our control of package size and weights centers on standards set up by tests and studies with consideration given to weave room requirements such as shuttle size, width of cloth to be woven (for bunch control), and proper build of bobbin to prevent sloughing.

"The first step of control is with the section man who makes frame changes. He fills in a form after each change which requires the following information: (a) date of change; (b) shift; (c) time; (d) frame number; (e) total weight of one doff; (f) yards on bunch; (g) shuttle size; and (h) name of section man. This form is given to the supervisor who in turn makes spot checks to see that the frames are performing as indicated on the form.

"We might mention that our filling frames are equipped with . . . automatic builders that bear the frames down and stop them automatically, and there is small chance that the frames will be short doffed at any time. We doff tagged showing the yarn number or style, the frame number, date, and doffer. By this method we are able to trace any filling defects to the source and make corrections accordingly."

Discuss your experience with changing flyers on roving frames

TABLE 1

Roving Package Weight Increase, and Allied Data from Use of Drop-Leg or Heavy-Package Flyers

Mill	Slubber size	Conventional or long draft	Increase in bobbin weight (oz)	Hank roving	Flyer speed (rpm)	Front roll		Stock carded or combed?
						Diameter (")	Speed (rpm)	
A	9" x 4½"	Long	5	1.11 & 0.65	1000	1 3/16	180 and 204	Carded
B	9" x 4½"	Long	7	1.05	1000	1 1/4	190	Combed
D	10" x 5"	Long	9	1.54	1000	1 1/8	150	Carded
F[1]	12" x 7"	Conv.	14	0.45	603	1 3/16	206	Carded
	11" x 5½"	Long	6	0.75	760	1 1/8	197	Carded
G	12" x 6½"	Conv.	14	0.60	700	1 1/8	208	Carded
J	11" x 5½"	Long	None	1.20	811	1 1/8	184	Carded
K	10" x 5"	Long	5	0.80	930	1 1/8	200	Carded
N	10" x 5"	Long	6	1.25	940	1 1/8	180	Combed
O	12" x 6"	Long	6	0.70	631	1 1/4	179	Carded
P	10" x 5"	Long	4	0.92 & 1.50	820	1 1/8	195 & 130	Carded
	12" x 6½"	Long	10	0.92	760	1 1/8	170	Carded
Q	12" x 6½"	Conv.	10.4	0.60, 0.72 & 1.00	740	1 1/8	219, 202 & 150	Carded
R	12" x 6½"	Conv.	6	0.65	686	1 1/8	192	Carded
S	12" x 6½"	Conv.	Goal is 15	0.70	700	1 1/8	186	Carded
U	9" x 4½"	Long	6	0.80, 1.00 & 1.25	860	1 1/8	203	Carded

[1]Tests reported from studying slubbers of different sizes. No extra wrap used.

to drop-leg or heavy-package type with extra wrapping on foot, giving (A) the following information: (1) size of slubber; (2) type drafting system used; (3) bobbin weight change; (4) hank roving; (5) make and size of flyers; (6) flyer speed; (7) front roll diameter; (8) front roll speed; (9) whether carded or combed stock is used.

The answers to part A are entered in Table 1 for ease of comparison.

Part B of the question: Discuss your experience with the following: (1) trouble controlling tension throughout doff; (2) effect on spinning ends down and other spinning conditions; (3) necessity for increased roving twist; (4) any other frame changes necessary; (5) effect on yarn strength; and (6) effect of evenness of roving and yarn.

The answers to part B are entered in Table 2.

TABLE 2

Drop-leg or Heavy-package Flyer Performance and Effects

Mill	Tension control trouble	Effect on spinning ends down	Roving twist increased?	Other frame changes necessary	Effect on yarn strength	Effect on round and yarn evenness
A	None	None	No	Tension gear & bottom cone gear	None	None
B[1]	None	None	No	Taper gear	None	None
D	None	None	No	Tension gear (6-tooth change)	None	None
F[2]	None	None	Yes (14%)	Compound, lay, tension, & taper gears	None	None
	None	None	Yes (8%)	Compound, lay, tension, & taper gears	None	None
G	None	None	No	None	None	None
J	Yes[3]	None	No	Moved starting point of cone belt 1" closer to small end of cone	No checks	None
K	Yes[4]	None	No	Numerous	None	None
N	No[5]	No checks	None noticed	None	None	None
O	Yes[6]	An increase	No	Top cone gear, bottom lay gear, & bobbin build	None	Hard ends
P	Yes[7]	No test	Yes (two teeth)	None	None	See footnote 7
Q	None[8]	None	Yes	None	None	None
U	None[9]	None	No	Changed builders & tension	None	None

[1]Used various types of drop-leg flyers on present flyers with no good results. Purchased one frame of flyers (10" x 4¾") and reported the results based on package weights from 9" x 4½" flyers.
[2]Reported results from two flyer sizes, the top entries being taken from performance data of 12" x 7" flyer; bottom entry is from 11" x 5½" flyers. No extra wraps were made.
[3]Unable to control the tension throughout the doff with extra wrap on presser foot. When tension was set correctly for start, roving broke at the presser or at the bobbin as bobbin became ⅛ to ½ full.
[4]Never obtained complete tension control throughout doff. Made numerous changes while seeking that control.
[5]Changed tension gear on one type of flyer and tension and lay gears on another type.
[6]Experienced tension control trouble at half doff, and this condition persisted even after tension gear changed. Excessive ends down from excess tension made it impractical to run the frmae. Roving and yarn full at hard ends.
[7]Drop-leg flyer, with correct tension, gave satisfaction. Tried extra wrap on conventional flyer, but the increase in ends down per doff did not justify the three- to four-ounce increase in bobbin weight. While tests are inconclusive, they indicate that the roving and yarn are about as even with extra wraps as without.
[8]Experienced no trouble after adding twist and breaking in the flyers.
[9]The exact answer, "Maintain constant humidity", suggested the entry "None."

KNOW WASTE FACTORS

for better cost control

by Mara Havinoviski
Exclusive

As INDUSTRY grows more competitive a more scientific approach is needed in an increasing number of areas. There are many ways in which a mill can keep track of its waste and standardize and use the resulting data to the very best advantage.

In the cost accounting function of manufacturing, some of the main questions relative to waste are:

1. Are the data reliable?
2. How easily can the data be applied to get results?
3. To what extent are total costs affected by these waste factors?

We have used one method of standardizing and tabulating waste by process and yarn count that proved most satisfactory indeed. This method consists of setting up a table for each yarn count showing each process and corresponding waste values.

To start with, the per cent waste of each process was determined, based on the individual input at each stage of processing. For example, let us consider 16/1 warp cotton yarn from twisting to weaving.

There were 20,000 pounds of yarn on cones put in twisting. We received from that process 202 pounds of waste, which means that the twisting waste amounted to one per cent.

We warped 19,798 pounds of 16/2 yarn and obtained 195 pounds of waste, which amounts to one per cent based on the input.

The 19,600 pounds of warp gave us 195 pounds of waste in slashing, another one per cent figure. Thus the input in weaving was 19,405 pounds.

From the weaving process we obtained 388 pounds of waste representing two per cent of the amount of yarn consigned to weaving. These percentages are listed opposite the respective proc-

esses (see Column II) in *Table 1.*

Column III indicates percentages of yarn left at the end of each process. These percentages are also based on individual process input. That is, as in Column II the produced poundage from one process becomes the 100 per cent input of the next process.

We had started with 100 per cent, or an index of 1.00, at twisting and had lost one per cent of that amount in waste. This leaves 99 per cent or 0.99 at the end of this process. In warping we lost one per cent so that we had 0.99 left of the input in that process. This procedure is continued to weaving where the waste was two per cent, which left us with 0.98 of the input in weaving.

Column IV indicates the overall percentages of yarn left at the end of each consecutive process. These percentages are based on the initial input of 20,000 pounds of material taken at 100 per cent. They are not based, as in Columns II and III, on the poundage from the preceding process.

The percentage of material left at twisting will equal 0.99. At warping it will be 99 per cent of the 0.99 left from the twisting operating or 0.9801. In slashing we got 0.99 per cent of the 0.9801 left from warping or 0.9703. And in the weaving process, 0.9800 per cent of the 0.9703 left from slashing or 0.9509 of the original yarn pound-

TABLE I

I Process	II Waste on input (%)	III Yarn left at each process (%)	IV Per cent of materials	V Waste reciprocal
Yarn on cones	——	1.0000	1.0000	1.0000
Twisting	1.00	.9900	.9900	1.0101
Warping	1.00	.9900	.9801	1.0203
Dry Slashing	1.00	.9900	.9703	1.0306
Weaving	2.00	.9800	.9509	1.0516

Gas diluter system is economical standby

at this wet processing plant

Staff prepared Exclusive

■ A GAS DILUTER system has proved an advantage in use at one large textile finishing plant. The system enables the plant to use one set of burners and one set of orifices for both natural gas and standby propane fuel.

The fuel is used for singeing, curing, drying, and other processing operations. Regular steam boilers are used for plant heat and other applications.

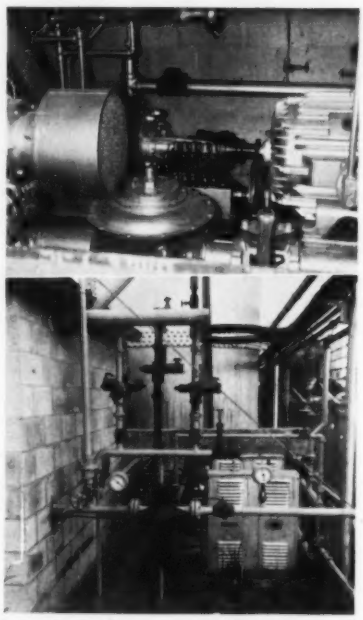
Using a mixing valve and an air compressor, the valve acts as a zero governor set at atmospheric pressure and is normally in nonoperative position. Propane gas from the storage tank goes to the gasifier and is regulated to eight-inch water column, goes through an electric LP safety valve, to zero governor, to a mixing valve which assures correct air-gas ratio. Then the compressor puts negative pressure on inlet side of valve and pulls correct mix through into service lines.

When the compressor builds to 35 pounds pressure, the by-pass regulator valve by-passes back to the compressor inlet line. This is a safety measure and is necessary to keep constant line pressure regardless of the volume of gas used.

This plant originally ran on propane gas. Natural gas became available and is used because of the cost advantage. The natural gas is used on demand rate (preferred cutoff); and any amount may be used until the gas company needs to cut the supply due to peak loads. During peak load cut-off, propane is used in the plant as standby.

Before the diluter system was installed, this mill used straight propane gas for all singeing, and some curing and drying; however, this was too costly because of the large volume of propane required. The diluter system eliminates the need to change orifices in all burners every time standby gas is used, and a major operational nuisance is thereby eliminated.

The present installation has been required for standby service only three days in five months. The only trouble experienced in making the installation came with a decision to put the controls in a house. This necessitated the substitution of Class I Group D controls; open-type switches and controls were received initially, and these had to be returned for the change. Also, a regulator already on hand was installed in lieu of prescribed equipment. This substitution caused trouble, did not work, and the correct valve had to be ordered anyway.



Top photo: Compressor, mixing valve, and electrical controls are located in a house provided for the purpose. Bottom photo: Propane gasifiers and pressure reducers and indicators are located near the control house.

age (taken as 1.0000) put in process on cones.

In Column V we list the waste reciprocals of the per cent of the original yarn left at each process. The reciprocal in warping is 1÷0.9801 or 1.0203; at weaving it is 1÷0.9509 or 1.0516.

To prove these figures let us go back to slashing. We produced there 19,405 pounds of yarn on loom beams. To determine how much yarn we had initially or how much yarn was needed to obtain this poundage, we multiply 19,405 pounds times 1.0306 and get 19,999 pounds.

The foregoing is only a sample tabulation. Using the demonstrated method we can determine waste reciprocals for all yarn counts made at a mill at each stage of process for both warp and filling systems. Without considering at the moment the various advantages offered by our complete tabulation, a more direct method to figure waste reciprocals would be to divide the initial input by the output of each process.

However, this is easy only in simple examples. A much more complex situation would develop when, for instance, we would have to include a split at roving, etc., and when production reports would give respective pounds produced but not the initial poundages fed.

The data we now have are as reliable as the waste determination is accurate. The procedure used in establishing waste factors does not need to be involved.

Departmental production reports for a representative period will give needed basic data in most instances. The various calculations are rather simple and the tabulation easily applicable to reach desired information.

It is readily realized that the tabulated values are handy in the following applications:

1. Estimating cost of yarns and fabrics

2. Estimating cost of inventory in process

3. As comparison and source data for use in decreasing excessive wastes

4. As an aid in the selection of economic yarns for new fabrics.

Rings, travelers, and packages discussed at Raleigh STA Meet

Staff report

■ APPROXIMATELY 175 textile men attended the recent meeting of the Eastern Carolina Division, Southern Textile Association, which was held in the textile school auditorium at North Carolina State College, Raleigh.

While discussing experience with recently developed longer-life type rings, one mill man reported on an experiment with 2½-inch rings on 9s warp. Travelers were first changed after 30 minutes of operation. Then three changes were made at 4-hour intervals before going to 32 hours, then 48 hours between changes. The next change was made at 1268 hours, then 1560 hours, then 1848 hours. Spindle speed was 7800 rpm, and traveler speed was 5000 fpm. A few travelers flew off and broke, the spokesman said.

Another operating executive told of using three different types of rings on 22-32s yarns. Breaking-in was accomplished by changing travelers after one hour of operation, then after 24 hours, then on a weekly cycle for 8-10 weeks, before going to changes on a two-week cycle. Regular travelers were used. "Improved" travelers permitted the mill to extend the change cycle to four weeks, he said.

A mill spokesman stated that the style of the traveler determines the amount of loading experienced. This mill cleaned by blowing off once each week and got some loading as a result. Monday morning cleaning was done by picking off. Burned travelers were reported after one blowdown in each of two mills.

Ends-down ranged from a low of 15 to a high of 45 per 1000 spindle hours. On 32s ends-down amounted to about 32 per 1000 spindle hours in one instance. 2½-inch rings, 11,500 rpm spindle speed, and 6200 fpm traveler speed resulted in 25 ends down per 1000 spindle hours, according to one report. Another mill man stated that "improved" travelers last about 600 hours at 6000 fpm; whereas, regular travelers average about 96 hours.

Spindle speed of 10,500 rpm was maintained on 21s yarn while front roll speed was 155 rpm, according to one man. Circle of traveler must be appropriate for the size of yarn spun; this is the reason for different styles of travelers, it was explained.

Creeling is done at random when using 12" x 6½" and 12" x 7" roving, and conventional creels must be modified for the large package, discussion revealed.

Ends-down on the large-package frames are affected by drawing and roving frames, so comparison with smaller package operation is difficult, one operating executive said. It is necessary to increase twist on the larger packages, but this has not shown any effect on drafting. No change was made in break draft for compensation.

The trend is for spinners to do nothing but spin because packages are getting so large, and at least one mill experimented with eliminating spinners altogether and not putting ends up.

M. E. Allison, Cone Mills Corp., chairman of the division, presided at the meeting.

Gilbert Mays, Erwin Mills, led the panel discussion on spinning room problems.

Help for wool mill supervisors

was the theme of NAWWO's 75th annual meeting

Staff report

MORE THAN 400 department heads and representatives from all segments of the woolen and worsted industry gathered at Boston's Hotel Manger on November 7-8 for the National Association of Woolen and Worsted Overseer's 75th annual convention. In keeping with long established policies of aiding supervisory personnel, the conference included speakers and panel discussions, giving members opportunity to participate in question and answer periods.

The Supervisor in Preventive Maintenance. The first speaker on the Carders' Guild program, James Johnson, manufacturing-engineering manager, Roxbury Carpet Co., discussed "The Supervisor's Part in Better Product and Machine Controls for Cost Reduction." He pointed out that the supervisor is the most important person in a cost reduction program, and it is essential that he get behind the program by offering suggestions and encouraging those under him to do likewise.

Mr. Johnson offered the following tips to help the supervisor reduce or hold his costs in line:

1. Production control and quality control are two very important working tools for the supervisor in his cost control program.

2. Proper scheduling and consolidation of orders to take advantage of "set ups." The cost per pound is less if the batches are larger.

3. Preventing down-time due to waiting for materials by predetermination of requirements, ordering and expediting deliveries of stock needed.

4. Keeping allowances of averages to a minimum and getting maximum use of service help by full machine loading and keeping equipment in continuous production.

Product Development. The second speaker on the Carders' Guild program was also an executive from the carpet industry, Richard Dorian, vice-president in charge of research and engineering, A. & M. Karagheusian, Inc., whose subject was "The Supervisor's Part in Product Development."

As introduction to his talk, Mr. Dorian broadly outlined the function of management as "getting things done through the efforts of other people," in which it is management's responsibility to:

1. Determine what people are to do.

2. Select the most qualified people to do the job.

3. Check periodically on their progress.

4. Find better methods by which they will do a better job.

He emphasized that the supervisor was on the "front line" of activity with a real job to do, which called for flexibility and pliability to cope successfully with changing conditions. He pointed out that with developments coming about rapidly in man-made fibers, in higher speed equipment, in materials handling and control systems, not to mention increasing automation, the supervisor's role has grown in importance and scope.

Turning to research and engineering, in which product development is involved, and which includes development of new methods and processing techniques, the creation of a proper atmosphere between production and staff personnel to carry out this function is most important and critical. He cited the following as being among the more important factors in achieving the proper spirit:

1. A mutual trust and respect for one another's ability, knowledge, and experience.

2. Good communications where they are most important. The technical man sometimes seems to talk down to the production man to make him feel inclined to reserve his opinions, thus to break down communications.

3. Show enthusiasm—it is motivation and it makes a difference.

4. Show imagination and creativity.

5. Be practical.

6. Be tolerant with any new idea or suggestion.

7. Be flexible and blend with changes.

8. Be optimistic.

9. Continue your education by attending meetings, reading trade magazines, etc.

10. To younger men who want to advance: Accept responsibility.

In concluding, Mr. Dorian pointed out that rarely does one individual plan a program in its entirety, even though the idea may have originated with him. He obtains facts from other people as he goes along to modify his original plan considerably.

Discussion. Following the presentation of papers there was a general question and answer period with Prof. Russell L. Brown of Lowell Technological Institute as moderator. The following are some of the questions, with members of the audience supplying the answers:

Q. What are some of the problems of starting a new department or installing new equipment?

A. First, there must be a need for the equipment; then the engineering staff undertakes to do the

Carders' Guild speakers and officers at the 75th anniversary meeting of the National Association of Woolen and Worsted Overseers, l-r: Richard Dorian, A. & M. Karagheusian, Inc.; James Johnson, Roxbury Carpet Co.; Russel Brown, Lowell Technological Institute; Charles Aulerich, American Felt Co.; William Neumann, A. & M. Karagheusian, Inc., and Charles Bean, Mercer Yarn Co.

planning, establishes specifications for building or an addition; and then there is development of a routing system. Following the engineering phases come selection and purchase of the equipment, its installation, and the first trials to determine quality and production.

Q. How do you determine when equipment is obsolete?

A. We must keep abreast of new developments. And you will also know from your costing, and by your competition whether you are in line.

A. I think the profit and loss statement is the best means of measuring that. When your top management begins to breathe down your neck, it may be too late.

A. It is also worthwhile to associate with machinery manufacturers' representatives. Their companies have invested in them, and you should keep in contact with them.

A. The carders and supervisors should have greater access to the machinery manufacturers' representatives.

Q. Can you discuss the use of emulsions and oils; that is, emulsions against straight oiling?

A. That will vary a great deal with the type of stock being used. In the carpet industry, there is another problem. When the yarn is being made, we have to make an emulsion that is suitable for carding and does not present any ill effects in the ultimate product.

A. The carpet industry cannot use oil as such because it is not compatible with the end use of the product. In the mill making cloth, the fabric is given a fulling, perhaps, and is rinsed to remove the oil.

A. In one wool oiling apparatus the emulsion is under pressure and a high speed air blast fan applies the oil to the individual fibers rather than to the mass. You use far less. The steam is only used for cleaning out the machine between lots. But the emulsion or oil is applied under pressure with air blast. With an emulsion you will get a much better dispersion throughout the stock.

WOOL/DACRON BLENDS

The Worsted Spinners Guild had as speaker Charles F. Linberg of Du Pont Co., who presented a paper, "Processing Dacron Polyester Staple and Tow on the Worsted System." Mr. Linberg distinguished between end usages of the two fiber types; namely, Type 54, which is chosen for clear finished tropical worsted and regular weight suitings; and the recently introduced Type 64, which possesses improved pill resistance and is used for the softer, more loosely constructed fabrics of similar types.

Top Making. In blends, a Dacron top is made first and then blended with the worsted top. Staple fiber may be processed on either a worsted or synthetic card; single-cylinder machines are most satisfactory. Production rates of 25-35 pounds per hour of 120-grain sliver from 60-inch cards are possible. Metallic clothing may be preferred to fillet, but either can be used.

Dacron tow for worsted blends should be cut into sliver on the Pacific converter. Proper creel arrangements and sufficient tow tensions are most important to control the staple diagram. Close shuffle zone settings help to break up the fiber groups made by the cutter and produce a more uniform web on the apron. Production rates of over 100 pounds per hour are possible with this machine.

Three gillings on either card sliver or converter sliver produce a good clean top. The first operation, feeding about eight ends of sliver and drafting between four and five, produces a three-ounce sliver. The second and third gills are each fed six ends with a draft of six. Faller bar pinning should increase from about 15 pins per inch on the first operation to 22 on the third.

To improve over-all processability in these and subsequent operations, from 0.2 to 0.6% of lubricating oil is recommended. The oils, either neat or in emulsion form, should be applied as early in the process as possible, usually in back of the first gill by either drip or spray applicator.

In the converter process, the ideal arrangement is to feed the oil by meter or controlled pump directly to the top roll of the crimper box.

Finish Reapplication. When dyed fiber is processed, two factors do not favor spinning: First, the original finish has been rinsed out during dyeing and scouring; and

secondly, the dye particles, particularly in heavy shades with disperse-type dyes, roughen the fiber surface and result in harsh or uneven drafting action. Improper finish reapplication has been responsible for such problems as excessive slubs, coarse yarn, uneven yarn, hard drafting in gills and combs, and the like.

To overcome these problems the fiber surface must be cleaned of excess dyestuff by scouring in the dye kettle with 0.5 gram per liter each of sodium hydroxide, sodium hydrosulfite, and a scouring agent.

The most simple and effective method found thus far by Du Pont for reapplication of finish is carried out in a backwasher of regular three-bowl design, with the first bowl used for additional scouring in slightly alkaline water; the second bowl containing hot rinse water, which should be kept clean; and the third bowl not used. The slivers pass across the third bowl to the last set of squeeze rolls, with extra weight being applied to the middle set of squeeze rolls to extract the maximum amount of water.

The finish is sprayed on the sheet of slivers in front of the last set of squeeze rolls, forcing the finish into the sheet of fibers to mix evenly with the moisture in the damp slivers. The finish is applied by metered pump, gear driven by the backwash rolls to accurately control the amount of oil.

In tow dyeing, where backwashing is not employed, the finish application system may be developed along similar lines.

After top dyeing and backwashing, two more gillings are usually sufficient for proper blending.

Blending of the Dacron with the worsted top is done in a gill box feeding three or four ends of each fiber. Feed stop motions are necessary for this blending operation.

A recombing, though of questionable value for the normal range of worsted counts, say up to 2/45s, is advisable for the fine-count yarns. This may be done either on French or Noble combs. Two or three gilings on 17 or 19 pins per inch are enough to return the sliver to satisfactory evenness.

Drawing. Three operations of pin drafting with drafts from 6 to 10 and faller pins increasing from 15 to 22 pins per inch are sufficient to reduce sliver to the desired weight to feed long-draft roving frames. Drafts as high as 20 are acceptable in roving.

Five or six operations of Bradford drawing with drafts up to seven are satisfactory. To prevent hard drafting, slight reductions in twist as compared to normal worsted twist are necessary. French drawing also with five or six operations and drafts of around four will produce good work.

As to relative humidity and temperature, between 70-85 F and humidities of 50-70% about cover the range. While no two mills may use the same process, the practical solution is to maintain the conditions in use as uniformly as possible, compensating for differences with changes in oil or finish application.

Tight Yarn Means Poor Quality. Since yarns of Dacron and wool do not possess the same felting and shrinkage properties as all wool yarns, in cloth mending it is more difficult to cover up defects. Big slubs and heavy yarns, for example, force adjacent yarn in the cloth to assume irregular positions around them. And in removing them, the adjacent yarns do not easily return to their normal place. Thus, slub catchers in winding should be set as close as practical to remove all possible defects.

Since Dacron/wool yarns possess greater strength and elongation than all-wool yarns, they can be stretched tremendously without breaking. But immediate recovery to their original length is low and the yarn will remain stretched until heat is applied. Thus, in scouring or dyeing, a stretched yarn will shrink and cause a tight place.

A major source of tight yarn is at the builder motion of jack spool quill winders. Also, in normal yarn handling operations, care should be taken not to stretch the yarn. Yarn that has been steamed or twist-set should not be processed until it has cooled for at least four hours.

Weavers, menders, and burlers need extra instruction on this problem. Weavers must not stretch the yarn when tying a knot; burlers should learn to push a knot through to the back rather than pull it; and menders should use only three- or four-inch lengths of mending yarn at a time.

All yarn handlers should use scissors. Efforts should be made to make first grade quality in the winding room and on the loom, rather than to impose an extra burden on the mending room.

Surgical mesh made from polyethylene filament

■ SURGEONS are reported to be using successfully a fabric woven from Marlex 50 high-density polyethylene yarn* for the repair of tissue defects of the chest and abdominal wall.

Dr. Francis C. Usher, associate professor of clinical surgery at Baylor University (Houston, Tex.) College of Medicine, reported recently on his successful 18 months' search for an inert plastic prosthesis that would set up very little foreign-body reaction.

According to the doctor, the new surgical mesh was used during the past year in Houston hospitals on 53 patients with large incisional or inguinal hernias. Following the operation, there were no recurrences. Three cases which developed wound abscesses healed completely following adequate drainage and the use of antibiotics. In no instance, Dr. Usher stated, was it necessary to remove the prosthesis.

The mesh was also used in six patients to replace large tissue defects resulting from excision of tumors of the ribs or of the abdominal wall. In all six cases, a firm but pliable fibrous tissue replacement was obtained.

Dr. Usher listed the physical properties of the polyethylene fabric as non-wettable, highly resistant to chemicals, thermo-stable up to 250 F, and high tensile strength.

*Marlex 50 polyethylene is a product of Phillips Chemical Co., the firm which also developed the surgical mesh.

1958 INDEX

of articles appearing in "Textile Industries" (Volume 122)

HERE IS your subject index of articles for 1958. It provides a convenient means of reference to information appearing in TEXTILE INDUSTRIES during the past twelve months.

The index will be most helpful to readers of who preserve their copies of TEXTILE INDUSTRIES as they are received, either in files or bound volumes, as it will enable them to quickly locate articles in which they are interested.

For those who do not preserve their copies of the magazine, the index will still be useful, since files of TEXTILE INDUSTRIES are available in the majority of public libraries in the textile manufacturing areas.

Free reprints of this index are available. Request them from the editors.

For a review of the new equipment and materials which were made available in 1958, refer to TI's Annual Product Parade & Buyer's Guide issue which was published in Mid-November of 1958.

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National and sectional officers of AATCC met at the Conrad Hilton before the convention.

Bonding of nonwovens

Nonionic detergents in raw wool scouring

Effect of heating on dyeability

Use of carriers in dyeing hydrophilic fibers

AATCC convention report

Staff report

CHICAGO may be "hog butcher for the world, tool maker, stacker of wheat," but she's no dyer of yarn or finisher of fabric. And a disappointinly small turnout of textile men for the 37th national convention of the American Association of Textile Chemists and Colorists proved again—if proof were needed—that Chicagoland is not Textileland.

The convention's technical sessions were as valuable as ever to the textile wet processing man, but speakers at most of the meetings addressed only a hard core of loyal members. Registration for the three-day meeting was less than half the more than 1700 who turned out for the previous year's convention in Boston.

WINNING the annual Intersectional Contest has become almost a tradition with the Piedmont Section; for the third year in a row the Section took first prize, this time for its paper, "The Effect of Thermal History on the Dyeing Properties of the Thermoplastic Fibers" [see page 94]. Second place in the contest was taken by the Delaware Valley Section [see page 97], and the Rhode Island Section was third.

THE POOR attendance at the 1958 convention has revived feeling among some people in the trade that the annual meeting should be held each year in the same centrally located place, with Atlantic City apparently the current favorite.

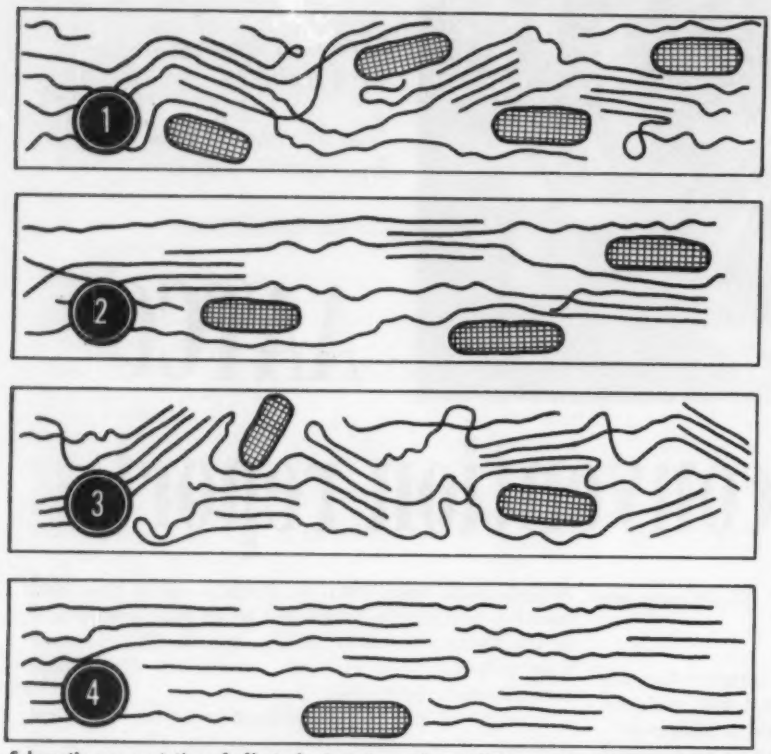
Commitments have already been made for the next three conventions—1959 in Washington, 1960 in Philadelphia, and 1961 in Buffalo—with the 1962 meeting tentatively scheduled to be held somewhere in the South (probably in Atlanta). AATCC brass is now considering a one-site convention after these commitments have been fulfilled.

Several of the papers presented at the technical sessions of the 1958 convention are abstracted on pages 94-97.

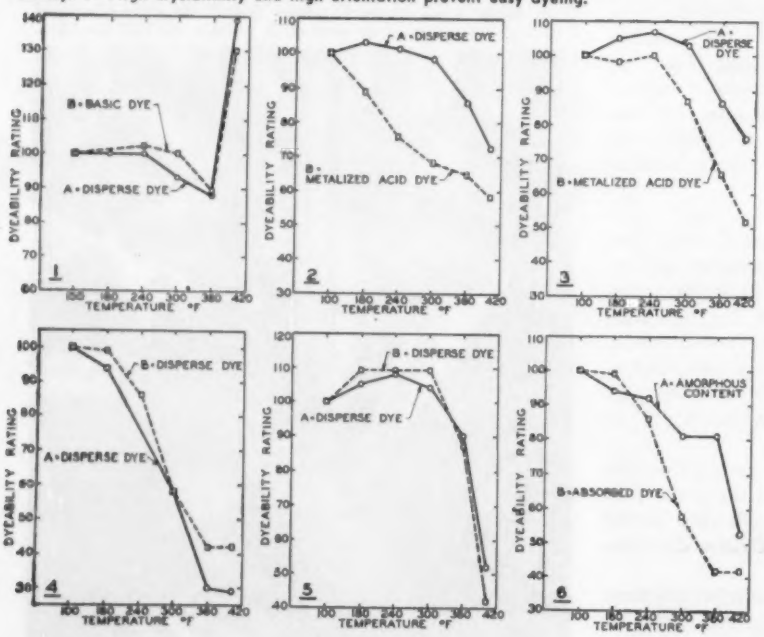
Olney Medal winner Henry E. Millson (right), American Cyanamid Co., is presented award by George O. Linberg, AATCC president.

Effect of heat on dyeability of synthetic yarns

Winning paper in the AATCC Intersectional Contest



Schematic representation of effect of orientation and crystallinity on dyeability: 1—Moderate crystallinity and moderate orientation allow easy dyeing. 2—Moderate crystallinity and high orientation reduce dyeability. 3—High crystallinity and moderate orientation reduce dyeability. 4—High crystallinity and high orientation prevent easy dyeing.



Effect of heat treatment on dyeability (untreated control 100): 1—Orlon. 2—Nylon 6. 3—Nylon 66. 4—Dacron. 5—Arnel. 6—Amorphous (noncrystalline) content of Dacron fiber.

Piedmont Section Abstract

DURING THE past decade, major advances have been made in the dyeing of synthetic fibers. Nevertheless, problems of uniformity continue to be a source of trouble. In fact, a number of textile manufacturers have stated that uniformity of shade is their most troublesome quality problem in the dyeing of synthetic fibers.

The nonuniformity shows up as warp streaks, filling bands, barré effects, face-to-back shading, side-to-center variations, and variations from piece to piece, both in filament and spun-yarn fabrics. They are met in knitted and woven goods, in square-woven and smooth faced goods, and in pile fabrics.

The object of this investigation was to determine if heat treatments before dyeing could be a major cause of the shade variations. These treatments include warp sizing, drying, singeing, twist setting, heat stabilizing, texturizing, and blocking of sweaters and hosiery.

Experimental Procedure. The fibers used were Orlon, nylon 6, nylon 66, Dacron, and Arnel. These were treated under tension with dry heat at 100 (control), 180, 240, 300, 360, and 400 F, in yarn form. Knitted fabrics of nylon 6 and of Arnel were also treated at 250 F under several conditions of dry heat and of wet heat, both relaxed and under tension.

The yarns were then knitted into tubular fabrics and dyed side-by-side in the same baths; the samples knitted before treatment were similarly dyed.

The dyed samples were compared by dissolving a portion of each with an appropriate solvent and determining the absorbencies of the solutions with a spectrophotometer. Changes in molecular weights of the

fiber polymers were also detected by measuring the viscosities of the solutions. Fiber crystallinity was checked by determining X-ray diffraction patterns.

Results. It was found that the various treatments can cause a major change in the dyeing properties of all the fibers tested. However, the differences in behavior are masked by the differences in the total amount of dye absorbed.

In order to put all of the data on a comparable basis, the amount of dye absorbed in the untreated control can arbitrarily be assigned a value of 100%. The other amounts of dye can then be given a percentage rating, as in *Figures 1* through *6*.

All of the fibers tested showed similarities in behavior, with a relatively slight change in dyeability when treated at low heat and a more rapid reduction in dyeability at elevated temperatures. The different types of dyes in most cases behave roughly the same.

The dyeability of the Orlon was less affected by the heat treatment than was that of the other fibers. The dyeability of the nylon 6 with certain dyes was more sensitive to low-temperature treatments than the other fibers.

Dacron showed a small but significant decrease in dyeability even with temperatures as low as 180 F.

Tension was found not to affect the dyeing properties of Arnel, but tension caused a decrease in dyeability of about 25% with nylon 6.

Moist heat reduced the dyeability of Arnel to about half the value obtained with dry heat, but on the other hand caused a four-fold increase in the dyeability of nylon 6.

Temperature Variations Which Can Be Tolerated Before Shade Variations Can Be Seen

Fiber	At Low Temperatures (180-240 F)		At High Temperatures (360-400 F)	
	Dye A[1], °F	Dye B[2], °F	Dye A[1], °F	Dye B[2], °F
Orlon	60*	60*	2	2
Nylon 6	60*	9	6	13
Nylon 66	60*	60*	7	6
Dacron	7	9	40*	40*
Arnel	40	60*	2	2

*No significant change in dyeability throughout the full range of temperature tested
[1]Interchem Acetate Blue GSF (Pr. 624)
[2]Eastone Fast Red N-GLF (Pr. 620)

Practical Applications. As a general rule, temperature, tension, and moisture content of the fibers must be kept uniform to obtain uniform dyeing. Duration of treatment and type of dye can also affect the dyeing variation.

Temperature differences in yarn and fabric processing which can be tolerated without causing differences in dyeability have been calculated and are shown in the accompanying table.

Improved scouring of raw wool

by W. Fong
Western Utilization Research and Development Division
U. S. Department of Agriculture

Abstract

SCOURING of raw wool with nonionic synthetic detergents of the alkylphenol ethylene oxide type under neutral conditions has gained wide acceptance over conventional soap and soda scouring in this country in recent years. The technical advantages of these nonionics include superior grease-emulsifying properties, lower detergent absorption by wool, lower heat consumption in drying of the scoured stock, and milder scouring conditions, resulting in less fiber damage.

Wools scoured by the neutral nonionic process are superior in color, possess a loftier hand, and exhibit reduced fiber breakage in subsequent mechanical processing, as compared with wool scoured in alkaline solutions.

A well-recognized disadvantage of nonionic detergents is that they yield very stable grease emulsions which are relatively difficult to clarify by conventional acid-cracking procedures. This drawback is an important consideration in the acceptance of nonionic scouring, particularly where stream-pollution regulations are in force, since wool-scouring wastes are among the most offensive types of textile waste.

In our work, several types of nonionic detergent, representing polyethylene glycol derivatives and alkylolamides, were compared in laboratory studies of raw-wool scouring. Scouring effectiveness was measured at various pH's. Acid and bentonite treatments were tested for effectiveness of coagulation of wastes derived from detergent scouring and from desuinting and suint scouring. Residual detergent was determined in the scouring effluents before and after clarification.

Among polyethylene glycol derivatives, the alkylpolyoxethylene ethers were uniquely effective under acid scouring conditions. They showed excellent cleaning effectiveness and low detergent consumption independent of pH over a range of 4 to 10. However, in common with other polyethylene glycol derivatives, the waste liquors produced were exceedingly difficult to clarify.

On the other hand, alkylolamides, particularly those containing a high proportion of dihydroxyethyl lauramide, exhibited the dual advantages of excellent neutral scouring efficiency and uniquely effective waste liquor clarification by simple cold acid-cracking.

The wastes from neutral scouring with the alkylolamide surfactants were subjected to clarification by treatment with bentonite and by acid-cracking with sulfuric acid at 65 C and at 25 C to a pH level of 3.0 - 3.3. For comparative purposes, wastes from conventional neutral nonionic scouring with an alkylaryl polyethylene glycol surfactant and from alkali scouring with sodium oleate were treated by the same procedures.

The waste treatment results show that in general the alkylolamide scouring wastes are easier to clarify than conventional neutral nonionic

scouring wastes. They are comparable to soap-and-soda-ash waste in clarifying behavior.

A very significant result was the uniquely effective grease removal obtained by cold acid-cracking of the alkylolamide wastes. Because of the unusually high grease removal obtained by cold acid-cracking of the alkylolamide wastes, the precipitated sludge settled extremely slowly compared with the hot-acid-cracked samples.

In contrast to wastes derived from detergent scouring, wastes from desuinting and suint scouring are effectively clarified by bentonite treatment without acidification.

Because of its high suint content and low grease and dirt content, the bentonite-clarified liquor has excellent detergent properties and could be recycled, if desired, to the second bowl of a scouring train to reduce the surfactant requirement. Such a procedure would be analogous to the Duhamel suint-scouring process, which depends upon high-speed centrifuging to clarify the suint-scouring liquor.

Acrylic binders for nonwovens

by A. C. Nuessle, C. E. Hoey, and J. Kucsan
Rohm & Haas Co.

Abstract

THERE are at least nine methods of bonding nonwoven fabrics; these may be outlined as follows:

(a) Felting: applicable only to wool or other scaly fibers.

(b) Needle punching: sometimes used as the sole bonding means, and sometimes as a supplemental means, as for example to hold doubled card webs prior to coating or other treatments.

(c) Solvent bonding: application of a fiber solvent or swelling agent to gelatinize the fibers, subsequently bonding by pressure.

(d) Thermoplastic fibers: added to the fiber mass before forming the web, and later bonded by heat.

(e) Thermoplastic powder: sifted into the web, then bonded by heat.

(f) Printing: local application of thickened binder in the form of a printed stripe or other pattern.

(g) Padding: more or less complete saturation of the web with a solution or dispersion of the binder; this is one of the most widely used methods of bonding thin webs.

(h) Spraying: this gives a lower degree of bonding than does a pad application, but the resulting web is loftier.

(i) Foaming: impregnating with a frothy mixture of binder and foaming agent; widely used for interlining.

In any event, thermoplastic binders such as the acrylic polymers are useful in at least five of the above listed bonding processes: foaming, spraying, padding, printing, and the powder technique.

Powder. This method is best suited to thick webs such as those used for the padding or stuffing of upholstery. The binder must be in the form of free-flowing, discrete particles, small enough to penetrate by gravity through the web, yet large enough to be trapped at fiber cross-overs.

Particles of the order of two to five thousandths of an inch are ordinarily satisfactory. On heating, the particles must soften and adhere to the fibers, and so bind them together.

A dry, so-called "powdered acrylic" —actually fine beads, prepared by a special polymerization method—amply fulfills these requirements.

Usually 15% to 30% of polymer on the weight of the fibers is sufficient for adequate bonding. Webs so bonded maintain their loftiness, due to the discontinuous nature of the bonding. However, the effect is not as washfast as, for example, that obtainable through a saturation process.

Printing. This was one of the earliest forms of bonding nonwovens on a commercial scale. A typical end use is exemplified by disposable items such as dental bibs.

This method of bonding is most often applied to thin card webs, in which the fibers are oriented in the machine or long direction. The binder, suitably thickened, is printed on in the form of a stripe running transversely across the fabric. This bonds the fibers and also contributes strength in the "filling" direction.

For the very cheapest disposable items, a low-cost binder such as plasticized polyvinyl acetate is ordinarily adequate. The use of acrylic binders is likely to be restricted to items such as drapes and curtains, where an intricate printed pattern serves both as binder and as decoration.

Padding. In its various forms, padding is probably the most widely used method of bonding nonwovens. It is especially applicable to thin or moderately thick webs, for end uses requiring a very complete degree of bonding.

In such an application, the binder —usually in the form of a rather fluid water dispersion—penetrates into every portion of the web, saturating it. Because the unbonded web has low wet strength, it is usually supported on a wire or plastic screen during impregnation. Excess binder is removed by squeeze rolls, in some cases aided by vacuum extraction.

The bonded web will contain from 15% to as much as 50% of binder solids. Because of the thorough penetration, an excellent degree of bonding can be obtained. However, in the case of thick webs there is often a skinning effect due to migration during drying; for this reason the process is ordinarily confined to thin webs. Furthermore, as a result of the completeness of bonding, together with the flattening effect of the pad pressure, there is a reduction in loftiness; the web is flat and compact.

The flexibility of the bonded web will be proportional to the flexibility of the bonding agent. The acrylics family comprises a variety of polymers having a wide range of flexibility. Moreover, the flexibility is not diminished by laundering, drycleaning, or exposure to heat or light.

The chief purpose of the binder is to glue the fibers together. Dry strength is nearly always adequate, regardless of the choice of binder, but resistance to laundering or drycleaning varies considerably with the composition of the polymer.

Washfastness and drycleanfastness of certain polymers can both be increased by addition of urea- or melamine-formaldehyde resins. A typical mix will contain 2% to 5% resin solids on the weight of the acrylic polymer solids. A small amount of acid catalyst is helpful, though not always necessary.

As a result of the addition of thermosetting resin, the fabrics are also somewhat more resilient. On cotton/viscose the strength is usually lowered in proportion to the amount

of thermoset added; but on nylon/acetate webs the strength may actually increase, reaching a maximum between 98/2 and 95/5.

Spraying. If carried to the extreme, spraying would completely saturate the web and thus give a result similar to padding. However, spraying is usually a more superficial operation. It tends to give a discontinuous bonding, similar to powder, but more or less restricted to the surface. On thick webs, the inner portions are only lightly bonded, if at all, and so retain their loft and resilience. This effect may be further enhanced by bonding with heat alone, avoiding pressure that would flatten the web.

Spraying is frequently used to obtain a surface deposit of binder prior to dielectric heat sealing. A similar surface effect could also be obtained by a kiss-roll application.

Spraying is confined largely to end uses where wet durability is not required. Furniture padding or stuffing is often bonded in this way.

Foaming. In this process a polymer dispersion, suitably formulated, is aerated or otherwise converted into a foam which is then gravity-fed onto the web. The excess may be scraped off with a doctor blade, or the web may be run through squeeze rolls.

There are several modifications of the process. In one case, a single thickness of web is coated on one side and the excess removed with a blade; then foam is applied to the other side and the web is passed through squeeze rolls. In another instance, two webs are first bonded separately, then "glued together" with foam. This is said to give a better result than would be obtained by bonding a single, thick web.

The foam process is claimed to give a product that is uniform, crease resistant, and porous. The greater uniformity is no doubt due to reduced migration. The foam is usually a high-solids formulation containing binder, emulsifier, foaming agent, thickener, and perhaps also a cross-linker.

Carrier-assisted dyeing of wool

Second-place Paper in the AATCC Intersectional Contest

Delaware Valley Section Abstract

THE USE of dyeing assistants, called carriers, to dye certain of the synthetic fibers, particularly Dacron, is familiar, and recently work has been done on the use of solvents as assistants in dyeing wool from an aqueous bath.

This research was undertaken to show that the principle of carrier dyeing is universal and can be applied to the hydrophilic fibers, such as wool.

The effect of time, temperature, pH, and concentration of carrier was investigated, using n-butanol and Acid Black 58 on wool skeins.

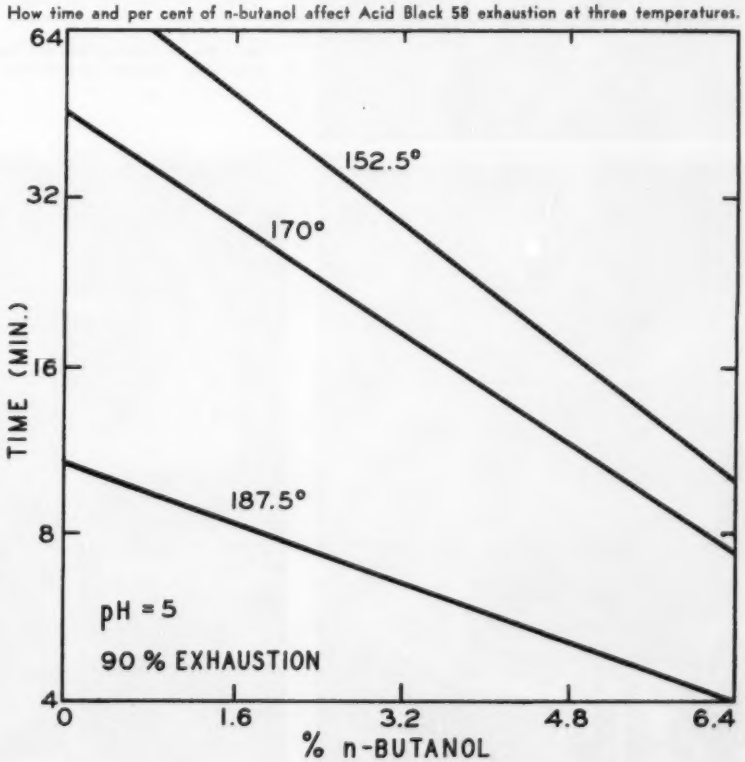
The time required to reach 90% exhaustion of the dye at three different temperatures and at various concentrations of n-butanol is shown in *Figure 1*. It was found that as the temperature is increased, the effect of the n-butanol decreases; and that as the pH of the dyebath is increased from 5 to 7, the effect of the n-butanol decreases.

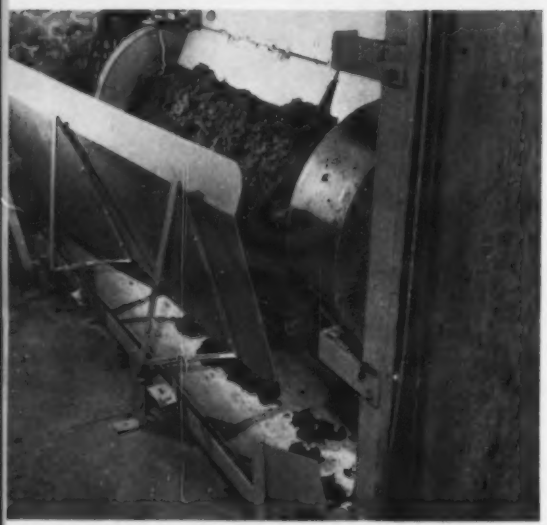
Other compounds were tested, and the following were found to have a marked carrier effect: benzyl alcohol, phenol, carvacrol, thymol, cyclohexanol, pine oil, ethylene glycol, ethylene glycol monobutyl ether, ethyl butyl ketone, and 2-ethyl hexyl alcohol.

Butanol was also found to have a significant effect on the rate of dyeing of Acid Red 85, and certain other premetalized neutral-dyeing colors responded to the addition of butanol, benzyl alcohol, or phenol. Milling types tested showed little response with butanol or benzyl alcohol, but looked more promising with phenol. Premetalized acid-dyeing types showed little or no response.

It was also found that some pigment dyes can be applied to wool by the use of butanol, and that clear dyeings with solvent dyes can be obtained by using phenol.

How time and per cent of n-butanol affect Acid Black 58 exhaustion at three temperatures.





COURTESY BEGGO CHEMICAL DIV., FOOD MACHINERY CORP.

The stock (this is wet cattle hair just received from a tannery) is dropped into prewashing pit where continuous changes of plain water remove dirt, etc.

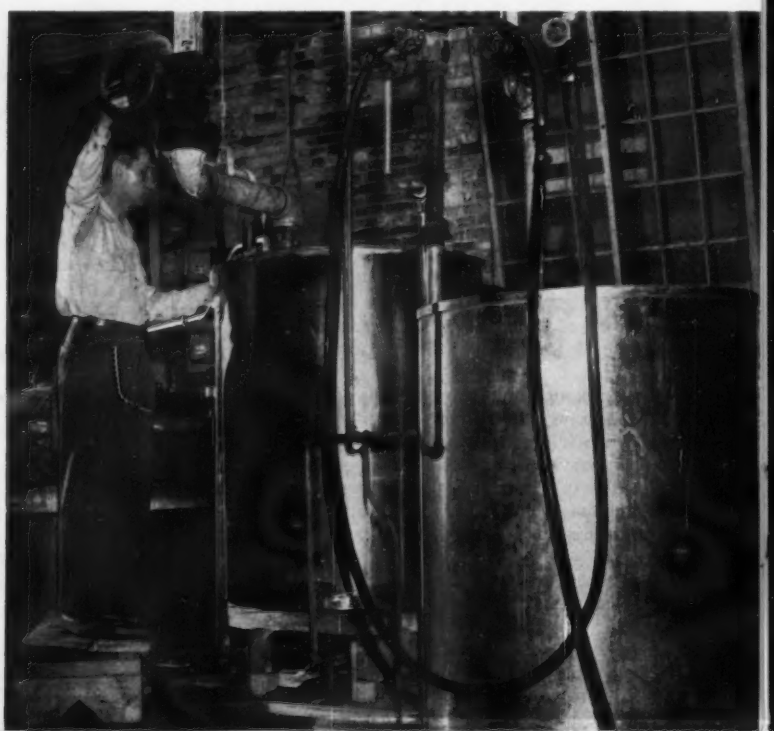
A bucket conveyor lifts hair from pit to main washer where a detergent is used if hair is excessively greasy. Squeeze rolls, those in foreground are rubber covered and pneumatically loaded, remove up to 50 per cent of the wash water.

A trip through the dryer (this is the exit end) prepares the hair for baling.

When scheduled for bleaching the hair is removed from the bales, the lumps broken up by hand, and the stock tramped into stainless-steel bleaching kier.

Operative is controlling flow of water to expansion tank during the bleaching cycle. The hydrogen peroxide used is received and stored in tank-car lots.

Note the contrasting bleached and unbleached (in bales) goat hair. This 2500-pound wet "cheese" from the big kier will now be dried and baled for shipment.



MANUFACTURED BLONDES

A bleaching firm prepares cattle hair, goat hair, etc., for taking pastel shades

Staff prepared Exclusive

PULLED cow, horse, calf, and goat hair have been used in blends with coarse wools for spinning and as a raw material for felts for a long time. The small amount of white fiber in this fiber class*, however, has limited the use of materials made from hair to dark shades. The price of naturally white hair is generally about four times that of the run-of-the mill.

A new complexion has been added to this situation by the development of a practical method for bleaching pigmented hair fibers, and an animal hair specialist, Stecker Hair & Wool Processing Co., Inc., Salem, Mass., has added this operation to its sorting, scouring, and blending function to provide mills with some new prospects in the use of hair.

Tanneries are the source of animal hair fibers; the job of a company such as Stecker is to sort and grade a large assortment of pulled material for staple, color, softness, grease content, and felting quality and to direct it to those mills which can best use individual types.

For example, one particular type of goat hair is suitable in length and softness for spinning; certain mill usage, however, may require stock that will produce cloth with a harsh, brashy hand. In at least one instance (polishing cloths) involving short fibers suitable for felting, only those fibers which will make a rock hard surface are desired.

In another case the hair fiber used must actually be nonfelting.

The system developed by Stecker over the years involves contact with tanneries all over the country. At the end of each day, sorters who have been trained by the Stecker folks but who are employed by the tanneries, go through the pulling production and separate it into sorts, each of which is tagged. At the end of the week, a tagged sample of each sort is submitted to Stecker.

Here the sorts are double checked, and if a grade is accumulated at a tannery in sufficient quantity, it is ordered to be shipped to one of Stecker's three warehouses located near tannery centers.

At the warehouse, the hair is accumulated by bale and by lot for storage until ordered out for shipment to a customer or to Stecker's scouring, bleaching, and blending plant in Peabody, Mass.

Hair For Felts. The material selected for use in the felting trade is directed to four different end-use categories:

1. Insulation felts
2. Carpet lining felts
3. Padding felts
4. Glass polishing felts

Critical sorting factors for this class of hair include grease content, fiber length, and felting characteristics. Grease content re-

*The terms grade, sort, class, and type are used in this description interchangeably, as they have no specific meaning for hair fibers as they do in wool.

Bales of bleached goct and calf hair, each weighing approximately 400 pounds, await shipment to blanket, carpet mills, etc., throughout United States and many parts of world.

quirements are strictly a mill problem (ranging from 3 to 15 per cent, depending on the blend to be made) and for the same end use can vary considerably from mill to mill.

Hair For Spinning. Traditionally, hair is blended about 50-50 with coarse wools, scoured, and spun on the woolen system for carpet yarns. There is considerable variation possible in the stocks selected.

With the licensing of the Stecker group to bleach pigmented hair fibers, new possibilities have been opened for the woolen and worsted mills to use hair fibers in apparel fabrics.

In carpet yarns, too, an increased market requirement for pastel shades can now be satisfied by using the 50-50 hair-wool blend.

Two cleaning operations are involved, the first of which is actually a prewashing to remove the usual quantities of dirt and other foreign matter (tannery hair also contains a generous quantity of lime used in removing it from the hides). Plain water is used for this purpose unless the hair is so greasy it requires a detergent.

This process is carried out in a "pit" some four and one-half feet deep into which the dirty hair is dumped. The water is changed continuously.

A bucket hoists the prewashed stock from the pit and dispatches it to the main washer. A belt conveyor takes it from there through squeeze rollers to extract roughly half the water. Here the familiar textile trunk line takes over and unmats much of the hair as it blows it to the steam-heated dryer.

Here it is fed through a lag or spike beater to open it further and is then discharged into the air currents of six fans that whip it about in the 200 F atmosphere of the drying chamber. It leaves there quite dry to be carried between two aprons to the balers for compression into approximately 400-pound packages. These are stored until scheduled for bleaching.

Tank-car lots of hydrogen peroxide are stored in an outdoor, 5000-gallon aluminum tank. As needed this is pumped to the kier site.

The bleaching is done in a kier that holds two bales. The mass is wet out in the kier with water containing a wetting agent. Thus the hair is conditioned for the hydrogen peroxide bleaching liquor, which is circulated through the mass until the stock reaches the desired whiteness. The bleaching equipment is made of stainless steel.

Following bleaching the hair is rinsed to remove all traces of chemicals, leaving the fibers slightly acid (pH five to six) to assist in subsequent dyeing. Compressed air forces the water from the kier and extracts much of it from the stock. The "cheese" is lifted by hoist from the kier, broken up by hand, and fed onto a conveyor apron for a final drying. It is rebaled and stored for shipment.

In this staff photograph Ray J. Stecker checks a "sort." Daily the tanneries sort pulled hair fibers and weekly send samples to the hair specialists for close "grading."

Loom-wound filling performance

was highlight of Georgia slashing-weaving forum

Staff report

Representatives from the Georgia mills found the newly decorated lobby of the textile building a comfortable lounging place before the meeting and during a short intermission.

IN SOME of the world's finest football weather more than 200 mill men attended the fall meeting of the Textile Operating Executives of Georgia that was held in the Harrison Hightower auditorium on the Georgia Tech campus on November 8. The men assembled to discuss mutual problems in slashing and weaving.

General Chairman *Clyde C. Cobb* presided; *Charles Pease* and *Lee Wynn* led the discussions on slashing and weaving respectively.

In the general election of officers, *Lloyd K. Williams* was moved from his position as vice-general chairman to general chairman, and *Willis James* was elected to the post of vice-general chairman. *R. O. (Bob) Simmons* succeeds Willis James for a 2½-year term, and *James A. Wright* assumes the remainder of B. V. White's unexpired term as executive committeemen.

Ten mills submitted replies to this nine-part question. For ease of reading each question part is treated separately.

Chairman Cobb instituted the following "unscheduled" discussion with two plant representatives leading the participation.

Question. How many looms have you equipped with loom winders; how long have those units been running? Give loom type and speed, type of filling stop motion (center, side, or double side), type of weaves and constructions, and range of filling numbers.

Ans. We have one hundred 44", X2 looms so equipped and they have been in operation about 11 months. Looms are operating at 184 ppm on double side fork filling stop motions. Fabric is Type IV work clothing; construction, 108 x 56; yards per pound, 1.39; width, 43¾"; 15s warp and 13.36s filling.

Ans. We are running one hundred forty XP special 54" looms at 165 ppm with single side filling stop motions. The looms have been in operation 10 months producing drills, broken twills, and dobby draperies.—2.20 and 2.30 drills, and 1. 35 bark cloth with 300-denier rayon filling. One style has 8/2 cotton warp and filling.

Question. Has there been a quality improvement, especially in regard to mispicks? Can you give an efficiency differential between conventional and Unifil?

Ans. There has been no significant difference.

Ans. Quality and efficiency are approximately the same.

Question. Are you using a special fixer for the units? Based on your experience to date and with volume installation, what is your estimate of the number of looms this fixer could handle? Could the regular loom fixer handle more looms?

Ans. One man covers the 140 units for three shifts. We plan to use two men covering 390 units for three shifts. Our regular fixer could not handle more looms.

Ans. We use a special fixer to handle the 100 units for all three shifts. He might possibly go to 400 units on a one-shift basis. We do not believe our loom fixers could handle more looms.

Question. Is your weaver assignment the same? Does the weaver creel new supply packages? How do filling breaks on transfer compare with conventional equipment?

Ans. Weaver assignments remain the same. We use a creeler for setting in the supply packages. The filling breaks on transfer remain about the same as for conventional equipment.

Ans. We cut our weaving assign-

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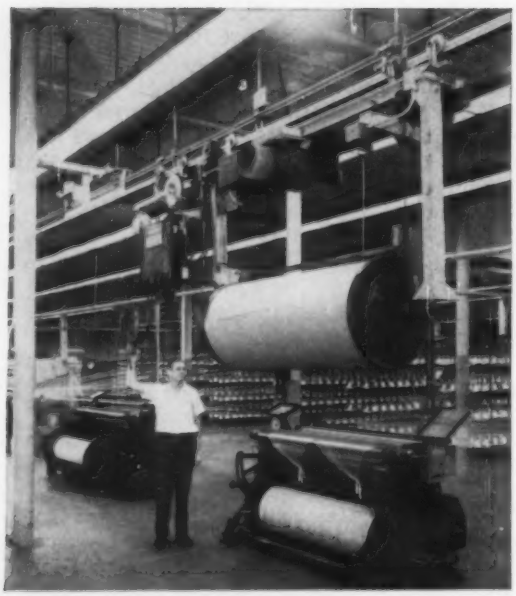

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ments 10 per cent, and we too use a creeler to handle the supply packages. Our filling breaks on transfer are approximately the same as we experience with the standard battery systems.

Question. What length quill and package diameter are you using? Have you changed shuttle size? Have you tried a small quill along with a small shuttle, thereby permitting an increase in loom speed?

Ans. Ten of our looms are running at 180 ppm with an I-section shuttle smaller than those carrying the eight-inch quills and 1¼"-diameter packages on our remaining 130 looms.

Ans. We are making test runs at 194 ppm on E-section shuttles carrying one-inch diameter packages. Basically we use shuttles carrying eight-inch quills and packages of 1¼" diameter.

Question. Was it necessary to change filling twist?

Ans. No.

Ans. We changed ours from 3.75 to approximately 4.00.

Question. Does shedding pose a cleaning problem?

Ans. We spend an additional 32 man-hours weekly cleaning strippers, the lower parts of the units.

Ans. We find we must exercise considerable care in blowing around the drum area.

Question. What is your repair part cost?

Ans. We found a 17 per cent rise in supply costs.

Ans. We are not ready with the figures on that.

Question. What is your quill-breakage experience?

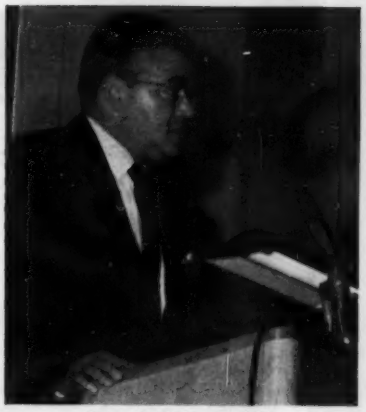
Ans. We break about one quill on the Unifil to about 4.5 on the regular looms. We don't need as many quills on inventory as the regular operation requires.

Ans. Our figures are not accurate, but we notice an improvement in breakage.

SLASHING

In regard to high-speed slashing, please answer the following and state whether you are using the hot air or multi-cylinder slasher:

a. Have you experienced any difficulty with moisture controls on high speed slasher? If so, what steps did you take to remedy?



General Chairman Cobb

Mill D. No. (Both hot-air and can slashers.)

Mill G. No particular difficulty experienced.

Mill H. Yes. Some difficulty has been encountered with moisture controls, and thus far the only solution has been to run the slasher on manual controls when processing heavy sets. (Hot-air slashers.)

Mill L. No trouble other than the controls getting out of adjustment and requiring recalibration. (Multi-cylinder slashers.) The firm feels, however, that the controls do not react fast enough and do not control closely enough.

Mill M. No difficulty experienced.

Mill N. No experience with slashers equipped with more than four cylinders, but has experienced no difficulty with controls on slashers in use.

Mill R reports no more trouble than was experienced with low-speed slashers. (Multi-cylinder slashers.)

Mill S has lowered the control settings to get drier warps.

b. Is there any difference in size pickup on multi-cylinder slashers when using two size boxes?

Mill G. "Yes, we have from one to two per cent difference."

Mill L. "Possibly some . . . we have experienced very little variation."

Mill M. "We find that if the size boxes are of identical types and adjusted the same that there is not any difference in the pickup when using two size boxes."

Mill R. "Yes."

Mill S. "One to two per cent more with second box."

c. When running high-speed, multi-cylinder slashers do you have trouble with selvage ends running out and in to the point of stuck ends?

1. Give kind of squeeze rolls.

2. If Griffin-type size box is used, please state pressure on dresser roll and squeeze roll.

3. Give yarn numbers and total ends.

4. Give slashing speeds.

Mill B. Selvage ends run in and out and tend to slack between the two squeeze rolls, a condition caused mostly from high and low selvages on section beams. By running the slasher slower, and consequently defeating the purpose of high-speed slashing, the condition is eliminated. Squeeze rolls are rubber covered and operate under pressures from 15 to 22 psi. The yarn numbers vary from 7s to 16s, and the total ends vary from 1128 to 5600. Slashing speed ranges from 40 to 85 ypm.

Mill D runs 10 psi pressure on dresser rolls and 20 to 40 psi pressure on squeeze rolls. The latter depends on the style and desired pickup. The narrow slashers (hot air) run from 80 to 105 ypm; wide ones (hot air and can) run 50 to 85 ypm. On the hot air slasher, warps of 3180 ends and 31s yarn are processed at the 105-ypm speed.

Mill G experiences the selvage-end trouble. The plant uses rubber on the back roll and yarn on the front roll. Speeds range from 50 to 120 ypm on warps containing from 1700 to 8200 ends.

Mill L. No selvage end troubles are experienced. With rubber-covered squeeze rolls the firm processes 13s to 25s yarns, 2800 to 5800 ends, at speeds from 50 to 85 ypm. Dresser pressure is 10 psi; squeeze roll pressure, 15 psi.

Some difficulty has been experienced at *Mill M* with stuck ends on the high-speed slashers. The firm uses yarn-covered squeeze rolls in processing 6s, 8.80s, 9s, 16s, and 20s and 2s/2 to 60s/2 yarns. The ends per set vary from 2000 ends to a high of 9000. Slashing speeds consist of 70 ypm on a set of 2562 ends of 9s yarn and 50 ypm for 5600 ends of 16s. The speeds are

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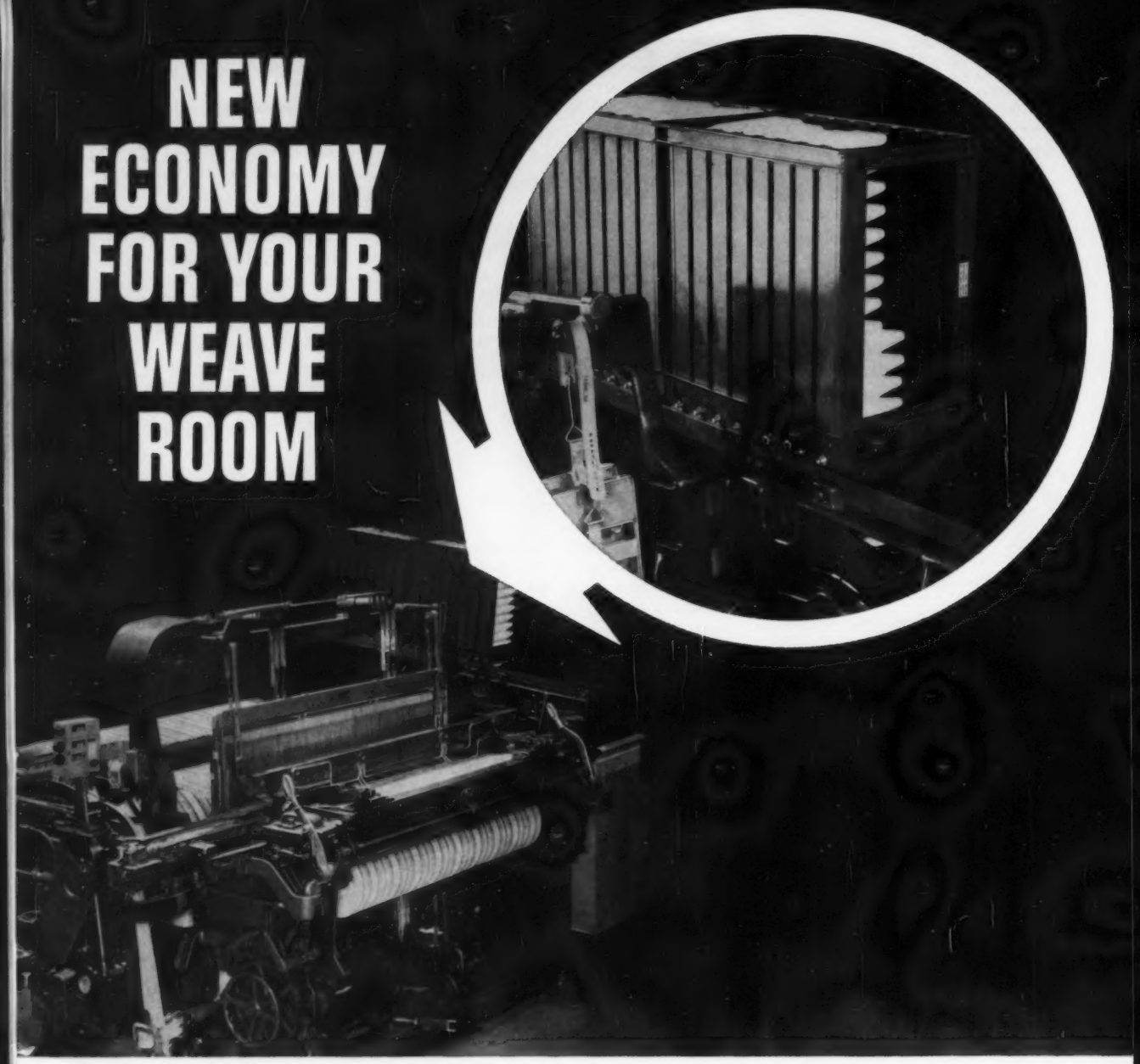

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varied to accommodate changes in number of ends and yarn size. Some rolling is experienced.

Mill N has no trouble with selvage ends, uses yarn-wound squeeze rolls in conventional size boxes. Sets consist of 4014 to 5800 ends of yarn counts of 20s, 16s, and 14.5s. Slashing speeds run from 30 to 70 ypm.

Likewise *Mill R* reports no selvage difficulties. The squeeze rolls are yarn wound and dead weighted (front, 750 lb; back, 650 lb). A set of 4609 ends of 14.25s is slashed at 68 ypm; a set of 5524 ends of 26s, 95 ypm.

Rubber-covered squeeze rolls are used at *Mill S* and are operated under 30 psi (dresser roll pressure is 10 psi). Sets consist of 4000 to 7000 ends of 21s and are slashed at speeds from 53 to 120 ypm.

d. What speeds are you able to obtain on high-speed slashers running 31s warp yarn, approximately 4000 ends? State whether multi-cylinder or hot-air slashers are used.

Mill D. Warps of 31s yarn, 3180 ends, are slashed at 105 ypm on a hot-air slasher.

Mill L. On a hot-air slasher a speed of 75 ypm is maintained on sets of 4000 ends of 31s yarn.

Mill R. A set of 5534 ends of 26s yarn is processed at 95 ypm.

Under similar conditions *Mill S* slashes at 110 ypm on multi-cylinder machines.

The hot-air slashers at *Mill U* produce warps of 4642 ends of 30.75s at 60 ypm.

e. When using high-speed slashers, do you have trouble with ends rolling on loom beam? If so, what did you do to correct this? Please give yarn numbers, number of ends, and loom beam size. Also state whether multi-cylinder or hot air slasher.

Mill B. No trouble.

Mill D. No trouble. Yarns vary from 9s to 34s, loom beams from 40″ to 120″. Both hot-air and four-cylinder slashers are used.

Mill G. Yes. Correction consists of adding two one-inch rollers between the back and delivery rolls. Yarn counts run from 12s to 40s.

Mill H. At this plant the trouble was reduced on 6000-end sets of 14s yarn (72″ beams) by placing a

Wynn—Weaving

finer dent reed on the hot-air slasher.

Mill L reports no trouble unless running loom beams with bad heads. Multi-cylinder slashers are used.

Mill N solved the rolling problem by picking a pin lease in section beam and spacing lease rods so the sheds would not roll together.

At *Mill R* the ends do not roll on loom beams. The firm has heavy-duty heads with traversing press roll and pneumatic beam compressor. Sets of 4609 ends of 14.25s are wound onto 50″ beams with 26″ heads.

Mill S reports "No."

f. Will the use of a wet lease on hot air slashers have any effect on slashing speed compared to running without wet lease.

Mill H. "Yes. The wet lease increases speed on heavy sley and decreases speed on light sley."

Mill L. "A wet lease will increase speed slightly on a hot-air slasher due to running in two thin sheets of yarn rather than one thick sheet of yarn. A wet lease will have more effect upon the lease rather than an increase in speed."

Mill N. "The use of a wet lease will definitely have an effect on slasher speeds on hot-air slashers. Heavy sets will not dry without it. We use two on these sets."

g. Please state your experience on maintenance of high-speed slashers. Please describe your maintenance program for high-speed slashers and state whether you use multi-cylinder or hot air slashers.

Mill B checks multi-cylinder slashers monthly, looking for any tight bearings or anything that would cause a major breakdown. The program also includes cleaning the hoods, packing size-box journals, checking friction, and giving the slasher a complete lubrication.

Mill G uses a check sheet each week end, checking all moving parts as listed.

At *Mill H* maintenance costs have increased on hot-air slashers. Part of the trouble is with Teflon coatings coming off rollers. A good grease for rollers inside the oven is being sought.

Mill L feels that multican slashers require 75 per cent more maintenance.

Of primary importance to *Mill N* is keeping the screens and hot boxes of hot-air slashers free of lint and dirt so that speeds can be maintained. A fixer at regular intervals does such maintenance as greasing, etc. The slasher men keep wool-yarn-wound squeeze rolls in proper order with schedules for adding flannel, etc.

Weekly *Mill R* cleans and oils all roller chains, greases can bearings, and size box squeeze roll bearings. The delivery roll, contact roll, and guide roll bearings are greased monthly.

Mill S does maintenance work on multi-cylinder slashers when creeling the sets.

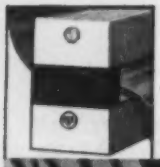
h. Please state your experience with a stop motion comb on the front of high-speed slashers.

Mill G. "A stop motion comb has been put on one of our slashers, and in our opinion it is a nuisance. It keeps the slasher stopped if on heavy sley and won't stop it on fine sley. We have been unable to adjust it so that it would work properly on either heavy or fine sley."

Mill L. "We have used stop motion comb on both hot-air and multican slashers and feel that they are quite worthwhile."

Mill S has had limited experience. Recently installed, the unit is very sensitive and will sometimes stop off with heavy sley without having broken ends.

(Continued on page 107)



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(Continued from page 105)

i. How do you control shedding on high-speed slashing?

Mill G has shedding and has no solution to offer.

Mill H. "Our only control on shedding is the use of lease rods at the front of the slasher."

Mill L. "This is a problem we have not solved, although proper size formulas, type squeeze rolls used, and roll pressures will help."

Mill N. "Shedding is controlled on hot air slashers by keeping size at correct temperature and viscosity in cooking and storage process and also in size boxes. Also finding best suitable formula for our own particular needs. Keeping squeeze rolls in good condition is also an important factor."

Mill R believes that keeping fresh size, yarn-wound squeeze rolls in good condition, and size temperature 206 F or higher in the boxes will help.

Mill S. "We still have shedding."

How many bobbins per hour does your battery hand put in? Where do you store the filling in relation to the loom batteries?

Mill A. 700—stored in baskets on tables placed in the post alleys and on spare floors.

Pease—Slashing

Mill C. 780—batteries filled from battery buggy which holds 450 quills. These buggies are filled by tender from large boxes adjacent to job.

Mill D. 570 on double-change goods and 614 on single-change goods—stored at filling station in the cross alleys.

Mill E. 510—stored in wooden boxes attached to the side of the loom arch. There is one box for each two looms.

Mill F. 635—kept in boxes at regular stations handy to batteries.

Mill G. 600—stored at each battery job.

Mill I. 619—kept in baskets on racks located on the weave room spare floor. Battery filler's trucks accommodate the baskets.

Mill J. 380—filling box on each loom located behind the battery.

Mill K. 750—in boxes mounted on each loom.

Mill M. 550—some filling is stored in boxes and on the loom near the battery. Some is kept in carts that the battery fillers push along the job.

Mill N. 561—at 87 per cent efficiency on 64-loom jobs. The filling is kept in boxes mounted on the loom near the battery.

Mill O. 700 to 750—stored in a rolling filling buggy that is supplied from filling trucks parked at the end of door alley.

Mill R. 540—fillers use battery buggies that are filled from filling trucks placed at the ends of alleys and in post alleys.

Mill S. 600 to 700—top-drive filling is located in a crate on each loom near the battery. This crate contains 240 quills as they are doffed from the spinning frame.

Mill T. 620—stored in boxes that are arranged in spare floors and box alleys as closely as possible to the looms in which it is to be used.

"Mystery" rug stains due to water spills, lab technicians find

■ PURE water alone annually produces brown or yellow stains on thousands of rugs, in most cases leaving homemakers at a complete loss to account for them, according to research technicians of the National Institute of Rug Cleaning.

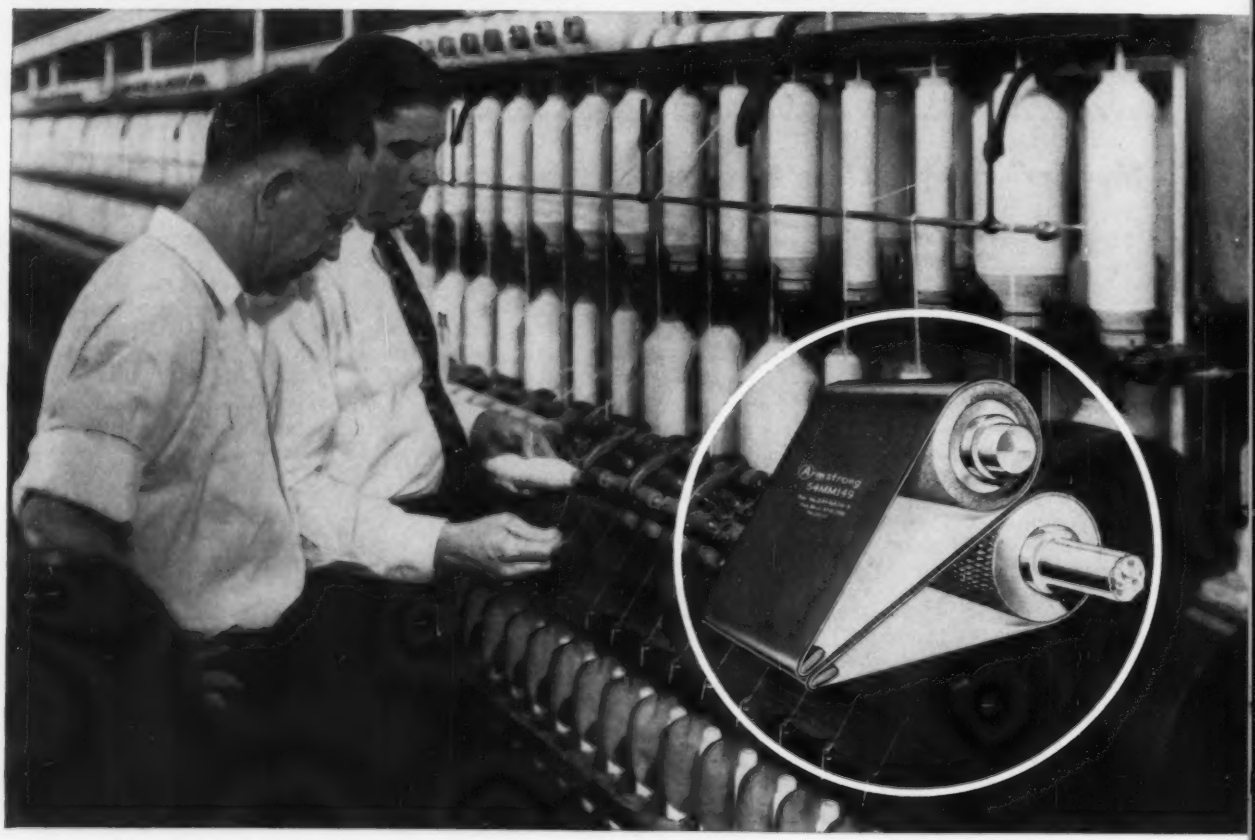
The source of the discoloration is the backing material which is usually made of jute, paper or unbleached cotton, they report, explaining that each of these fibers is subject to a natural process called cellulose degradation, the same process which causes old newspapers to turn yellow or brown. In addition, most rugs are given a sizing of starch or dextrine, both of which supply the same type of impurities found in the backing yarns.

The trouble comes, they say, when water, either spilled or used in cleaning, is allowed to soak through to the backing. When that occurs, the impurities are dissolved. As the water dries, the tufts of the rug pile act as wicks, bringing the water and browning substance to the top of the pile where final evaporation leaves the impurities on the surface of the rug. [See the accompaning illustration.]

When water is spilled accidentally, staining can be prevented, the technicians report, by blotting up all the water possible immediately, using clean white unstarched terry cloth, white absorbent tissues, or white paper towels.

When the spot has been dried as much as it can by that procedure, fresh blotting material should be placed on the area and weighted down. As the remaining moisture rises to the ends of the tufts it will continue into the blotting material, carrying the impurities with it instead of leaving them at the surface of the rug pile.

NO-7076
Armstrong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If you're not already using Accotex Aprons, ask your Armstrong representative to arrange for a test in your mill. Prove on your own frames what an important difference in yarn quality Accotex Aprons will make. Armstrong Cork Company, Industrial Division, 6401 Ivy St., Lancaster, Penna. All Armstrong Accotex textile supplies are available for export.

Armstrong ACCOTEX APRONS

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This photograph shows an installation of Meadows Twisters in a very large Southern thread mill. BUT it could just as well have been in a tire cord plant (ply or cable) or a combed, carded or filament sales yarn plant, or even a carpet yarn plant. The same twister, with minor alterations, is being used for many types of yarn and is available to fit your needs as to gauge and ring size.

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Solution to a wintertime coal unloading problem

■ CARLOADS of coal received in the winter months often cannot be readily unloaded because of ice in the bottom of the cars, an operating executive of a large wet processing plant in the South reports. The coal is either wet when placed in the cars or it gets wet in transit. As a result, when below-freezing temperatures are encountered, ice forms in the bottom 12 to 20 inches of the load where the water has settled.

At this plant 10 to 12 cars of coal are unloaded daily, so the frozen loads presented a problem—to wait for the outside temperature to rise enough to thaw them naturally was not practical.

A faster method of thawing the loads was provided by making portable heating units from tanks of propane and spare burners used on gas-fired boilers. With the burners heat is applied to the frozen chutes (as shown in the accompanying illustration), quickly melting the ice and releasing the coal.

Use of physical measurements in describing wool studied

■ RESULTS of an investigation of the use of physical measurements in describing domestic wool are contained in a recently published United States Department of Agriculture report*.

Twenty-one lots of domestic wool were processed into top. Samples of grease wool, scoured wool, card sliver, carding and combing wastes, noil and top were drawn as the lots were processed. Such physical characteristics as fineness, length, staple crimp, yield, and color were tested and their application in the description and appraisal of wool studied.

Among the observations made after concluding these examinations were the following:

(1) The effect of skirting on the fineness or the grade of wool top was not consistent from lot to lot or grade to grade; however, there was a tendency for the skirted top to be slightly finer and somewhat more uniform in fiber fineness than the unskirted top; the removal of skirts from fleeces did not appear to influence the fiber length, the yield, and the color of the top, nor the per cent noilage.

(2) The use of the proposed standard specifications for grades of grease wool, applied to core samples, and the application of length testing methods were found to be more consistent and precise methods of describing fineness and length than the visual methods employed in this study.

(3) The per cent stretch of grease wool staples appears to be more closely associated with the normal length of the grease wool than with its fineness ($r = -.56$; $r = -.33$).

(4) Studies on crimp confirmed the general observation that crimpiness decreased as grade became coarser; coefficient of correlation values indicated that the number of crimps per inch was more highly related to fineness than to length ($r = -.95$; $r = -.83$).

(5) Crimp type index, a numerical value used to indicate or measure the distinctness and prominence of crimp boldness within a lot, appeared to be related to length to a higher degree than to fineness or crimp-per-inch data ($r = .71$; $r = .59$; and $r = -.56$).

(6) There was a very high relationship between top-noil-waste yields and yield determinations based on the 1¼-inch core sample ($r = .99$).

(7) Impurities carried by the grease wool were the most important single factor influencing yield; however, comparisons of top-noil-waste yield, top yields, and yield estimates based on the 1¼-inch core sample, with the various physical properties and characteristics of the wool, revealed that higher yields were usually obtained from the coarser and longer wools than from the finer and shorter wools.

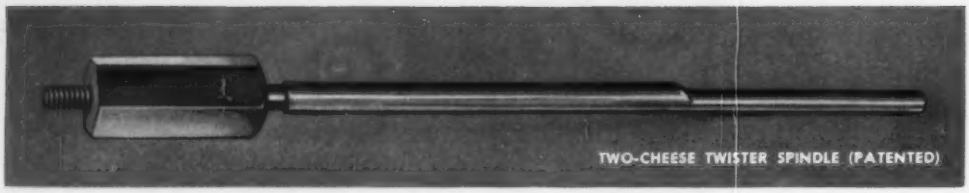
(8) There were strong indications that the incidence of clean wool appearing in the wastes (excluding noils) was primarily controlled by the carding and combing machinery rather than by the characteristics of the wool being processed.

(9) The miscellaneous vegetable matter in grease wool seemed to follow through into top to a higher degree than did the kinds of burrs contained in the lots tested.

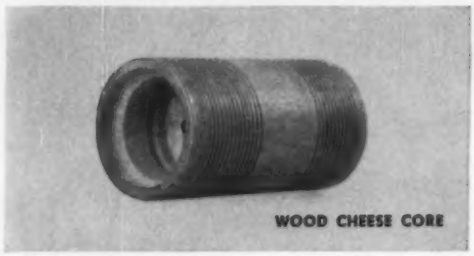
(10) Coefficient of correlation val-

*"Physical Measurements and their Application in Describing Wool," (Marketing Research Report No. 256), by D. D. Johnston, H. R. Keller, W. A. Mueller, H. D. Ray, H. C. Reals, and E. M. Pohle of the Wool Laboratory, Standardization Branch, Denver, Colo. The report is available from Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.; price, 35 cents per copy.

BARBER-COLMAN ACCESSORIES



TWO-CHEESE TWISTER SPINDLE (PATENTED)



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ues indicated that crimp type index, fineness, and length were more closely associated with per cent noilage than were the other physical properties tested ($r = -.74$; $r = -.72$; and $r = -.71$).

(11) Color ratings obtained on the scoured core samples appeared to be reliable indicators of the color ratings that could be expected for the lots in the scoured wool, card sliver, and top stages.

Woven goods finishing off 5 per cent in 1957

■ 9,776 million linear yards of cotton, silk, and man-made fiber fabrics were finished during 1957, the Bureau of the Census reports. This was 5 per cent below the 1956 figure.

Cotton fabrics finished amounted to 7,705 million linear yards, or 5 per cent less than the quantity finished in 1956. The 2,071 million linear yards of silk and man-made fiber goods finished was 4 per cent less than the previous year's total.

Of the total fabrics finished, 5,951 million linear yards were finished for apparel uses (6 per cent below the 1956 level). The quantity finished for household uses decreased 7 per cent from 1956 to 1,982 million yards in 1957. For other uses the quantity finished increased 2 per cent.

Finishing plants located in South Carolina finished 29 per cent of the cotton goods. North Carolina and Massachusetts followed with 15 and 14 per cent, respectively. In the finishing of man-made fiber and silk fabrics, New Jersey was the most important state, accounting for 38 per cent of the total production, while Massachusetts and New York accounted for 14 and 10 per cent respectively.

The production in 1957 of cotton, rayon, and acetate resin finished fabrics for crease resistance amounted to 1,446 million yards, according to the report.

Current gin cleaning practices up mill processing costs, report shows

■ RESULTS of a recent U.S.D.A. study indicate that the use in gins of additional overhead cleaning equipment, the reduction in lint moisture, and the use of lint cleaners substantially improve the grade of the cotton, but at the same time other quality changes occur which will significantly increase the cost of processing at the mill.

These general conclusions are based upon data currently available from laboratory and mill tests of lots of cotton harvested by machines from a field in California during the 1957-58 season. These lots were subjected to varying levels of overhead cleaning, drying, and lint cleaning. The most intensive cleaning methods used in the test are in excess of levels usually recommended by ginning laboratories or cotton technologists. Samples of cotton were taken at all stages for laboratory evaluation. All lots were processed under uniform conditions in a commercial mill into a standard print cloth.

Effect on Fiber Length. The use of additional overhead cleaning equipment in gins and reduction of moisture content of lint adversely affected the length of fiber as determined by the fiber array method. This adverse effect was evident in samples of lint taken as the bale left the gin and also in samples taken at several stages in processing in the mill. Lint cleaners did not appear to exert a significant influence upon length.

A reduction in moisture significantly increased the proportion of fibers shorter than ½ inch in the samples taken as the cotton left the gin and at all subsequent stages in mill processing. The adverse effect of the use of additional overhead gin cleaning equipment upon the occurrence of short fibers did not appear in samples taken at the gin, but was evident in samples taken at various stages in processing at the mill. Statistically, lint cleaners did not appear to affect the occurrence of short fibers at any stage.

Fiber Strength. The results revealed no significant relationship between Pressley strength measurements of fiber as it left the gin and any cleaning methods. However, for samples taken at various levels of mill processing, it was found that there was a slight, but significant, difference in strength due to differences in moisture levels. The analysis indicated that the use of overhead gin equipment and lint cleaners resulted in significant differences in strength, but this result was not consistent at all levels of processing.

Foreign Matter. Results from the Shirley analyzer indicated, in most instances, that a reduction in moisture and the addition of overhead and lint cleaning equipment all reduced visible foreign matter. However, mill waste was significantly affected only by differences in overhead and lint cleaning equipment.

Use of more elaborate cleaning practices at the gin appeared generally to have a small adverse effect upon the yarn appearance index and upon the break factor but, because of some inconsistencies, these results were not conclusive.

Neps. Neps in card web were significantly increased when additional overhead equipment at the gin was used, but did not appear to be affected by lint cleaners or differences in lint moisture levels.

Ends-Down. Ends-down in spinning both 30s and 40s yarns were significantly increased when moisture was reduced during ginning and by the use of lint cleaners. Differences in overhead equipment did not appear to be significantly related to the occurrence of ends-down. A high positive correlation was found to exist between the occurrence of ends-down and the proportion of short fibers. About 64 per cent of the variation in the ends-down in spinning 30s yarns and 86 per cent in spinning 40s yarn was associated with variations in the proportions of fibers shorter than ½ inch.

The complete report, entitled "Effects of Cleaning Practices at Gins on Fiber Properties and Mill Performance of Cotton" (Marketing Research Report No. 269), is available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25 D. C.

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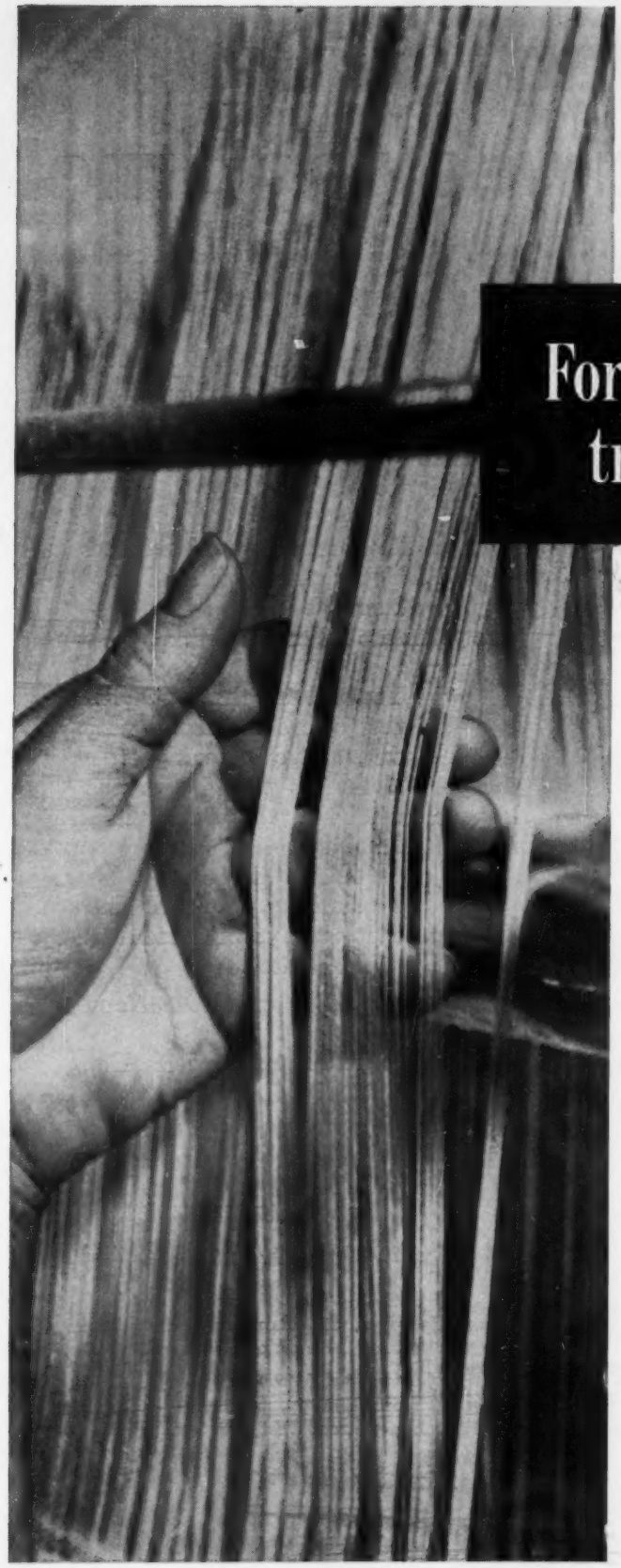

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An important guide to spinning and weaving Arnel

With the tremendous success of Arnel fabrics, there is great demand for technical information. Celanese bulletins TD-13A and 14A give all facts and procedures. Here are some of the important points covered.

1. Arnel triacetate staple can be spun readily on the cotton system.

2. Arnel staple blends well with many fibers such as cotton, rayon, nylon, polyesters and acrylics to obtain yarns with varying degrees of strength and a wide choice of characteristics.

3. Special opening, conditioning, precautions, or techniques to handle Arnel staple are not required. As is true of most man-made fibers, aging in lap form will be beneficial in improving subsequent processing.

4. You can weave Arnel in the same manner as acetate and many other yarns. No significant change in loom adjustments or equipment is necessary.

5. When fabrics of Arnel are designed, be sure to allow for shrinkages and/or stretching, however small. For example, approximately 2% shrinkage for tight spun yarn twills and high sley filament fabrics should be allowed as much as 6% for open type linen constructions.

6. Arnel filament yarns have slightly different frictional properties from acetate, therefore quilling tensions should be adjusted accordingly.

7. In slashing spun Arnel and blends, similar sizing ingredients as used for spun acetate yarns are recommended.

8. You will find that wet splitting before the first drying can, and overwaxing after the yarn sheet has passed over the last can could be very helpful in slashing spun Arnel and blends.

9. In slashing, you will find that Arnel yarns stretch less than acetate.

For Technical Bulletins TD-13A and 14A write to:
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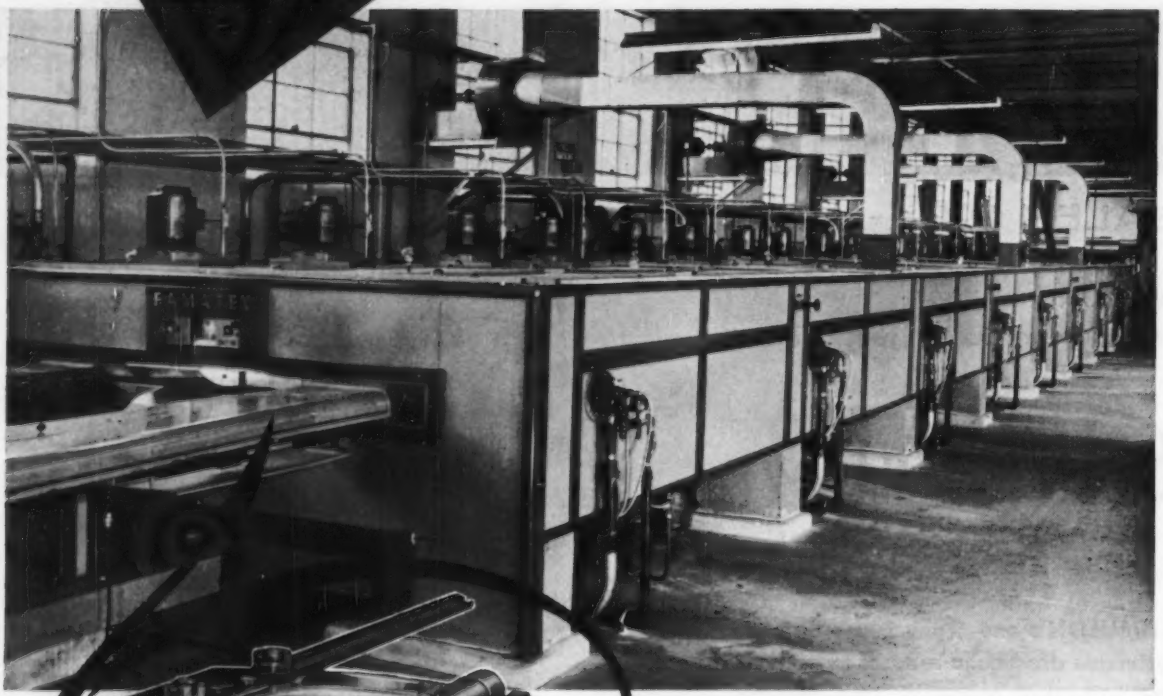

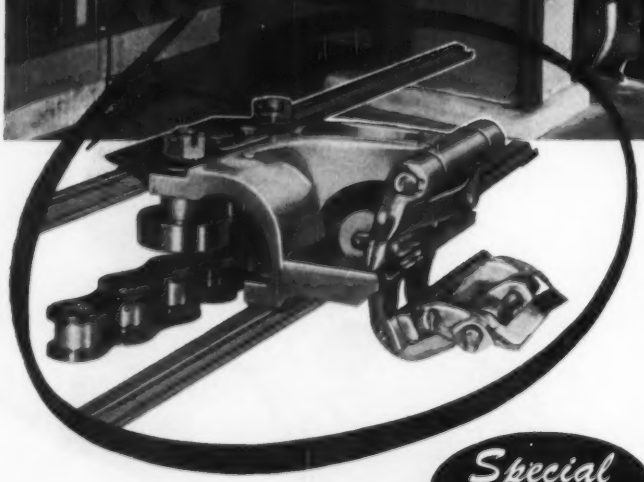

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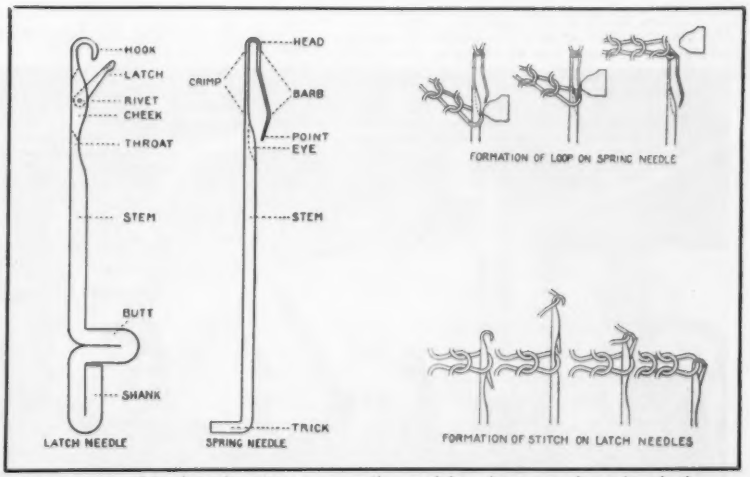
Tips for learner-knitters

Fundamentals which knitting department foremen should find useful in training

by Thurston Powell
Exclusive
Part 1

SO YOU wish to be a knitter, to keep the world supplied with socks, sweaters, undershirts, and the "jillion" other things classified as knitwear. While you can't be accepted in the ranks of accomplished knitters for some time to come, you will find those ranks open to receive you once you do make the grade.

In the meantime you have work to do. You will find that, while nothing on earth can take the place of experience, experience alone can be quite frustrating—you haven't seen a classic press-off yet. So, if you can be steered around some of the discouraging pitfalls of learning, your progress will not suffer the delays experienced by those who intend to "see for themselves." Maybe this dis-



Components of latch and spring type needles, and how loops are formed with them.

A gentle puff of air now and then will keep the machine clean enough. Full-power blowing snarls yarns, clogs parts with lint.

Carefully wipe from all surfaces any oil that can be transferred to the fabric.

cussion will help.

The skilled operator, familiar with the problems of his machine, not only avoids expensive breakdowns that cut into company profits, but he finds his eight-hour tour of duty a pleasant experience and not just a series of crises—headaches, they are often called. The sight of a skilled operator, relaxed, calm, and in command of his job, is a great contrast to the confused and baffled beginner who finds his machine a monster dedicated to embarrassing or betraying him.

Threading the Guides. The invisible operation of a properly running knitting machine is almost miraculous, at least to the operator. The yarn feeds into the guide holes, the needles flash, and out comes the flawless fabric—or a dropped stitch. Why?

The good operator will know what happens inside his machine. It is a marvelous example of the inventor's art, but it requires the alert and intelligent attention of its operator. A dull or uninterested operator will produce faulty fabric simply from not knowing what it is that his machine is doing.

On each needle of the machine is a hook and a latch. The hook catches the yarn; the latch makes the loop. As the latch of each needle passes the guide it is open on the right side. On the left of the guide the latch sheds the old yarn and catches up a new piece, closing as it does, and so the fabric is made.

Obviously the guide threading is vital. An experienced operator watches the guide like a hawk, making sure from minute to minute that the guide is operating so that the yarn is "latching" accurately each time. The needles flash, the latches open and close, and the fabric pours forth clean and perfect, but the operator's eye is on the guide to make sure that this is so.

Consider, for instance, the importance of threading. A good knitter threads properly. On some machines there are three eyelets, each designed for a particular count of yarn, just above the cones of yarn. A clever knitter selects the nearest eyelet to the count on the cones he is using, because if the eyelet is properly selected, it will catch most of the slubs and tangles which otherwise cause trouble in the guides.

Cleaning. It is up to the knitter to be the master of his machine and to make sure that it operates at full efficiency all the time.

And a sure way to make this certain is to keep it clean. No, it isn't easy.

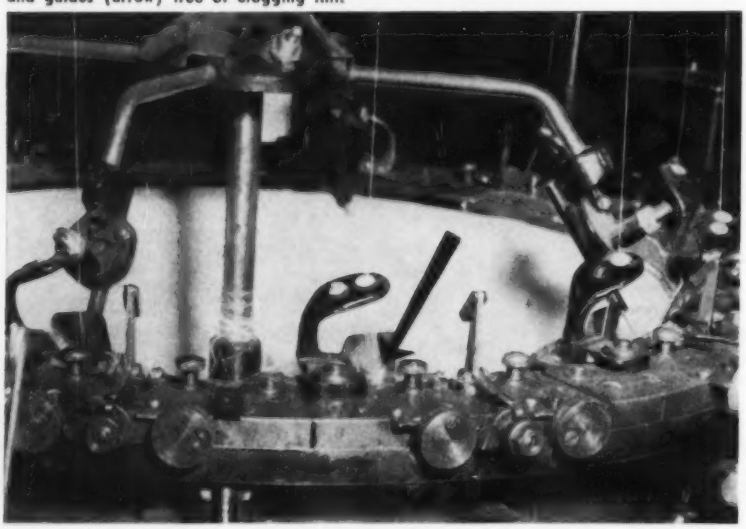
Knitters work with machines that are necessarily lubricated and with yarn that sheds lint. Oil and lint will combine like mad, even in the very air.

The smart operator doesn't let a machine get dirty. A careful wiping of the operating surfaces with a piece of cloth, at the beginning of his shift followed by a gentle puff of air along the machine periodically during the work time, does very well. Full-power blowing is never a good idea.

Once lint is allowed to pile up, the blower simply forces the lint into the needle holes and frequently causes quite a jam-up.

Few Tricks of the Trade. There is a small trick common to many operators when they leave a machine for a time. They cut a hole in the fabric above the take-up in

The clever knitter selects the eyelets to accommodate the yarn diameter and keeps them and guides (arrow) free of clogging lint.



which to place their small tools—knife, scissors, pencil, etc.—and upon their return to the machine, they forget this cache. The result, when the machine is started, is disastrous. And there is no need of such foolishness.

If nothing else is available, use an empty yarn cone and fasten it somewhere about the machine, where it will not interfere with the operation. This makes a good holder for small tools.

Such a holder should also contain some used and discarded needles. Every knitter knows how necessary a needle is for various purposes besides just knitting. Cleaning out oil holes, putting up press-offs, threading machines, and a dozen more.

But it is obviously wasteful to seize a new needle for such purposes. Keep some old needles on hand for such jobs—it is a great nuisance to have to go looking for an old needle when you need one. To use a new one to clean an oil hole is not good for company profits, a prosperity important to you as an employee. Keep a few used needles by you, in your private cache.

The Inevitable Press-off. The press-off is a challenge to the knitter's skill, not the end of the world.

It is also, to be sure, dismaying, but you won't help matters by worrying about whether you'll get one, for get one you will.

When one occurs, don't leap at it half-cocked and using all your most valuable language. Instead, back up a step and consider what caused it.

What happened? Clearly, an end must have broken. Very good; find the end and why it broke. Then have the cause repaired. Once that has been taken care of thoroughly you needn't worry about the machine making another press-off and can take your time about clearing away the mess.

Adjust the fabric in the pressure rollers, using the turn wheel, until the fabric is a fraction looser than it is when the machine is in normal operation. See that the fabric is shedding off the needles about eight to ten inches behind where you are putting it up, because when you get around the machine with the press-off the yarn should be almost off the needles when you finish.

There are dogs on the machine—pieces of steel, one attached to the dial, the other to the cylinder, set to press together to keep the needles properly spaced. Start the press-off at one of the dogs by slipping the fabric through the dog at the beginning to keep the dial and cylinder from pressing together.

Now break the one yarn out of the guide where the press-off started and ravel the yarn on the needles on the right side of the guide, putting the press-off up on the left side of the guide. Hang about one-fourth of an inch of the fabric on the long, or cylinder, needles about one-quarter to one-half inch apart, turning the machine in proportion to get what has been hung on the needles to rise up close to the guide. Stop turning.

Continue this process all around the press-off. As you approach the dogs, put the fabric up as close to the dogs as possible and then back the machine a shade with the turn wheel. This allows you to slide the fabric through the dogs quite easily.

As you arrive at a point about six inches from where the press-off started, thread the yarn that broke out of the guide back through the guide. Then finish the press-off.

It isn't easy the first time. But it is by no means impossible, and once you have mastered it, you will never be panic-stricken at the necessity of accomplishing it.

The finishing touch is to roll up the fabric on the pressure rollers, watching closely as you turn the machine by hand until the machine is shedding off onto normal knitting. At that point you start the machine.

The important thing is to know what you are doing, work slowly (whistle if possible), and regard a press-off as "just one of those things."

(To be continued in next issue)

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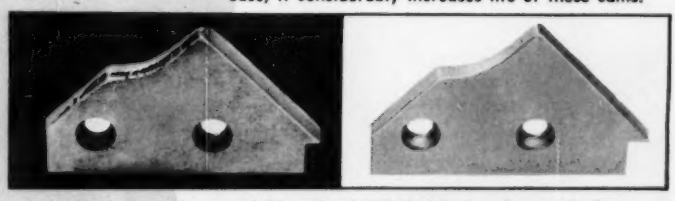

Knitting machine cam (left) made of SAE 1095 high carbon steel after one month 24-hour-a-day service. Wear ridges on top surface cause an uneven knit. Identical CHROMALLIZED cam (right) has no wear ridges after same service and lasts 2 to 4 months.

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How Mauney Hosiery Mills make

circular-knit leotards

Staff prepared
Exclusive

Komet machines produce stretch stockings and leg portion of tights.

GOOD MANAGEMENT in maintaining flexibility of manufacturing operations has put Mauney Hosiery Mills, Inc., Kings Mountain, N. C., into the market for circular knitted leotards. Production of leotard tights and colored stretch stockings was started immediately upon market acceptance.

W. K. Mauney, Jr., president, and Sam Stallings, Jr., worked out the patterns, and production in this plant is on 48-gauge Komet Links & Links machines having 200 needles. Standard operating speed is maintained in producing tights with stretch yarn.

Seventy-denier Fluflon is used with 50/2 CP cotton looper line for toes. Both tights and stockings are made on the Komet machines here, and knitters inspect goods as produced by the knitting machines.

After knitting, toes are looped, followed by an inspection. Then automatic scissors are used to slit stockings to be used in tights. Individual slit patterns for right and left sides accommodate a symmetrical seat insert which is sewn in.

Stockings made for tights are longer than over-the-knee length colored stretch stockings, the added length being necessary to make the apparel waist high in the finished form. The slit mark is made by cam action on the knitting machine which makes a "frame." The frame mark serves as a guide to the scissors operator in making the

Slitting is performed with automatic scissors along a "frame" line.

Overlock sewing machines of several makes are used in fabrication.

One conventional looping operation is performed on toe of each leg.

The inspection which follows looping is done on conventional forms.

slit at the right place and to the correct length.

The seat insert is made of tubular fabric and is of double thickness as sewn in. An elastic waist band is sewn in a separate operation subsequently to the insert.

The sequence of operations after knitting: looping operation on toe, inspection, slitting, sewing seat insert and gusset, sewing waist band and bar-tacking waist band. Overlock sewing machines are used.

Upon completion, the garments are taken to the dyehouse where they are dyed in rotary-type dyeing machines. 50 dozen garments are dyed simultaneously in a 100-lb machine. This same machine accommodates 80 dozen pairs of over-the-knee length colored stretch stockings.

Currently there are six colors used on the stockings and three on tights. Stocking colors include red, black, rust, camel, royal blue, and green. Tights are made in black, royal blue, and red only at present.

After dyeing, the tights are boarded on conventional equipment, using full-fashioned forms and extended drying time for the additional fabric area. Each pair of tights requires two forms (one for each leg). Inspection, folding, and packaging in polyethylene follow.

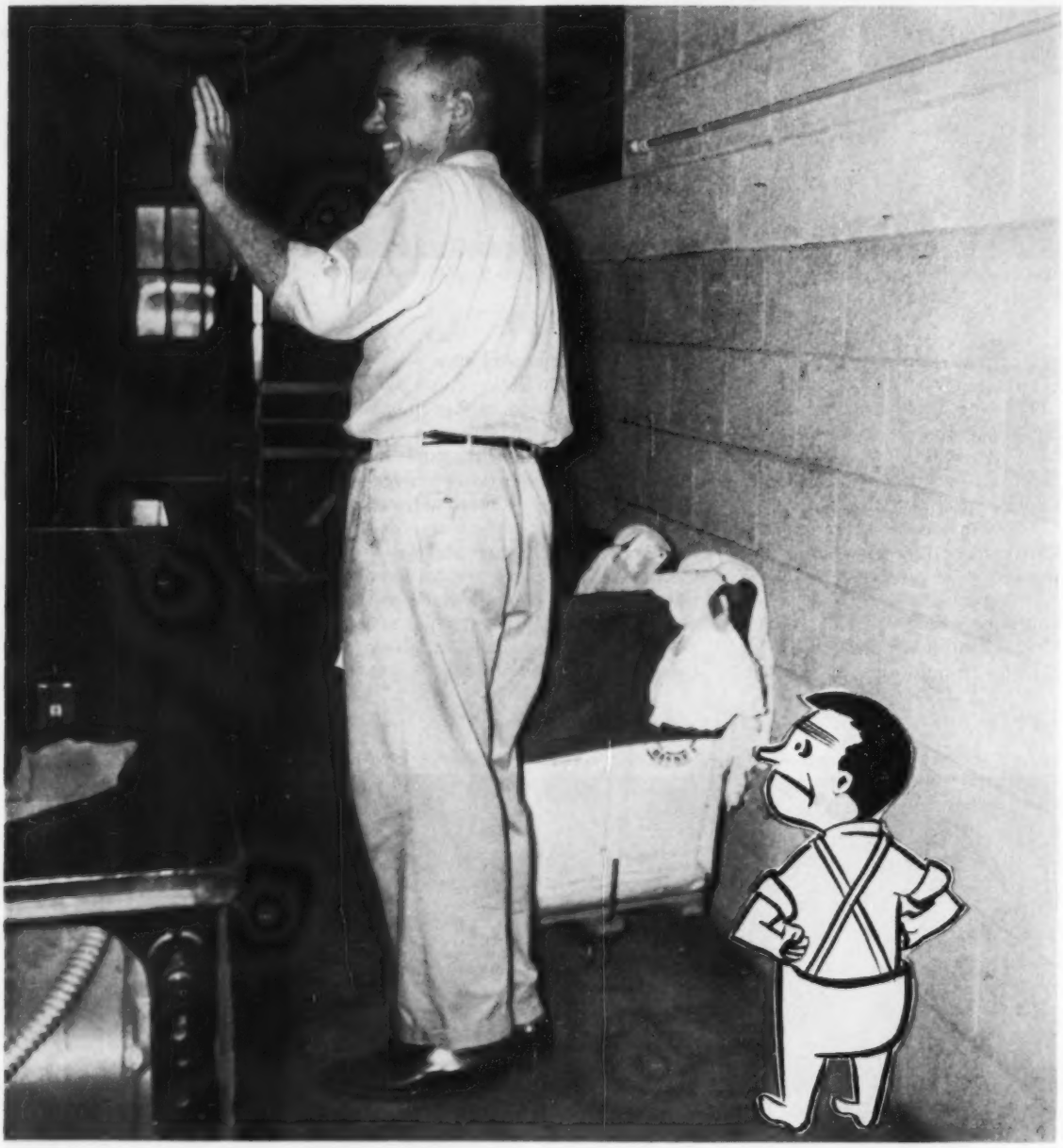
The bags are shipped in boxes containing one half dozen each. That the mill is pressed for deliveries attests to the quality job done in every detail.

Leotards are dyed in rotary machines in 50-dozen-garment batches.

Two boarding forms per garment are used; drying time is extended.

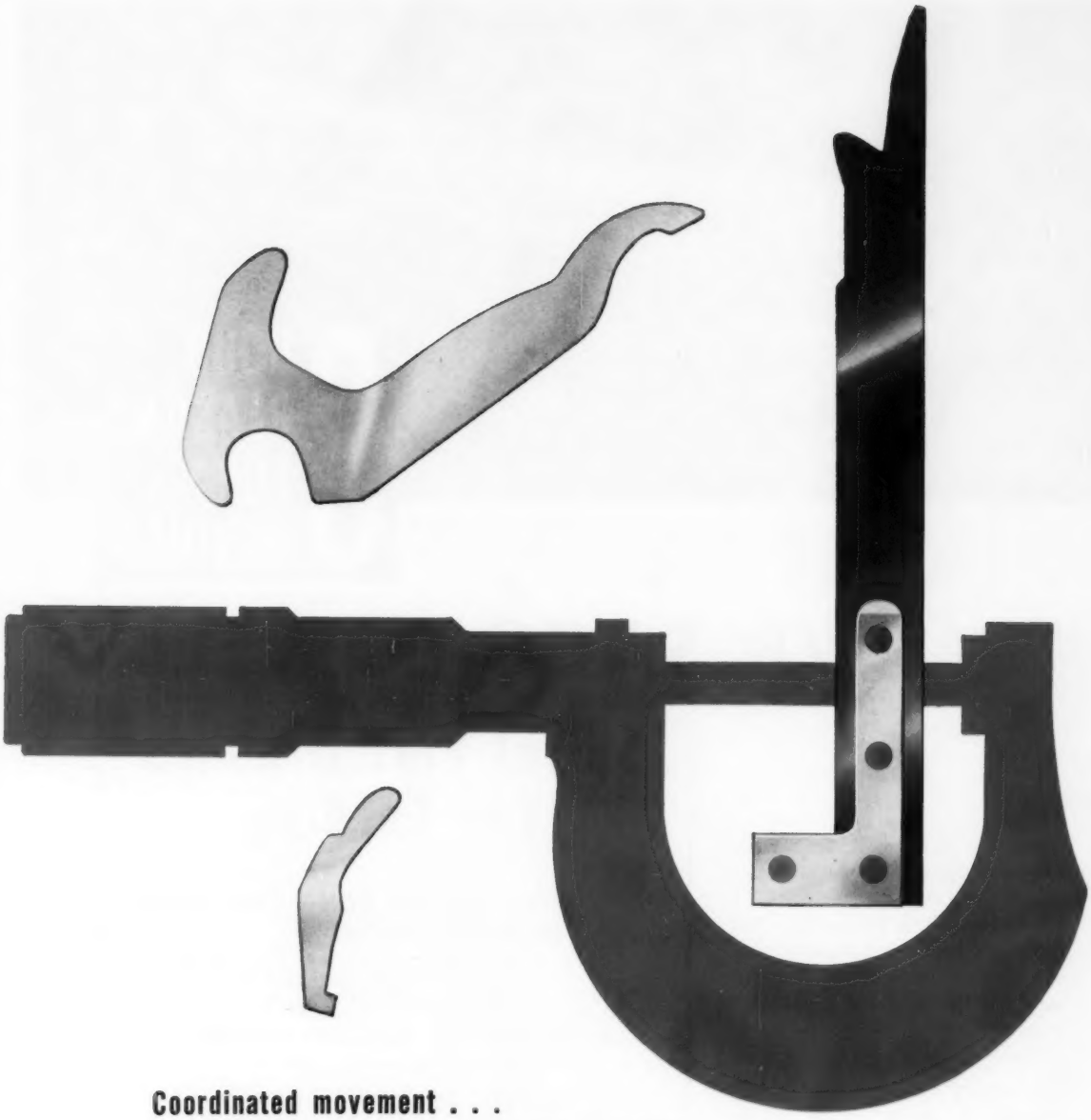
Knitting Hints No. 53

NO ROOM FOR HORSEPLAY



PROTECT STOCKINGS FROM DAMAGE AT ALL TIMES

Trim along this line to post on bulletin board



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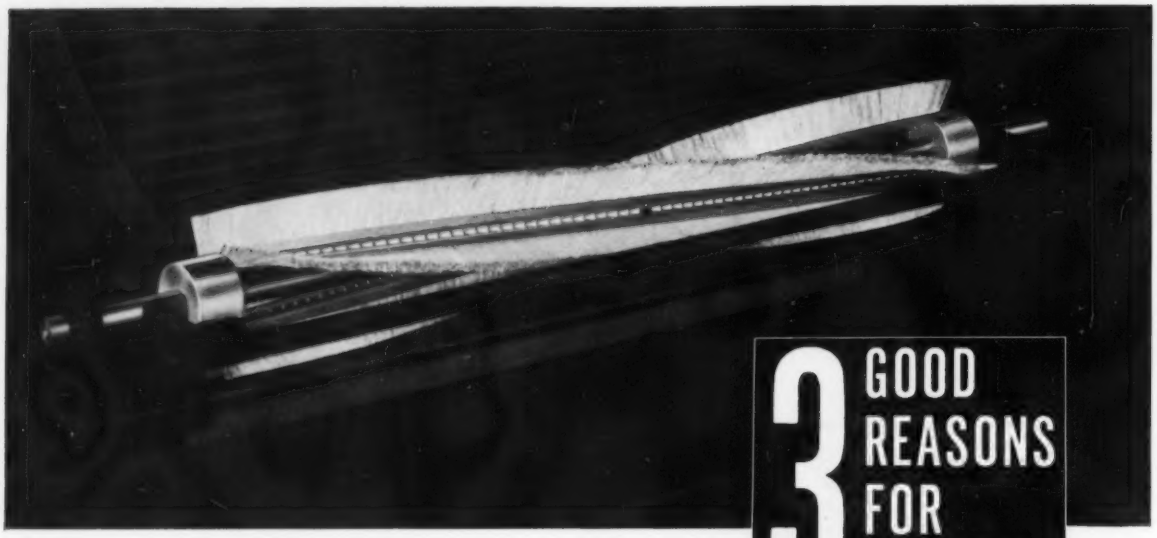

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HOW OTHER MEN MANAGE

• Letters to Editor • Technical Discussion •
• Manufacturing Briefs • Kinks & Short Cuts • Comments from Readers •

To reduce mill costs, concentrate on loom supplies

THE EDITORS:

When mills concentrate on reducing costs, most of us begin to analyze closely our labor and/or raw materials with the thought in mind of improvements which would effectively reduce our costs and help us remain competitive.

One factor enters into our total cost, a factor often examined somewhat hurriedly and accepted at whatever it may be at any given time—supply costs.

An effective reduction in supply costs can be realized, especially on loom parts (as this comprises more than one-half of most mills total supply cost) if a control system is set up with the sanction of top management. It is necessary to sell and emphasize the necessity and importance of a minimum supply cost commensurate with good maintenance and quality to overseers, assistants, and loom fixers.

Oftentimes we have control reports such as labor costs, efficiency, seconds, waste, etc., which are used to keep these items before everyone, and quite often competition between different departments and shifts is encouraged.

After learning that our supply costs were out of line when compared to other mills, we began to investigate methods for bringing such excesses in line. Apparently we were not competitive in this phase of our operations, although we compared very favorably and in most instances were better than our competition.

The thought occurred that if other control reports had proved effective so far as maintaining our competitive spirit and status, why couldn't this same principle be applied to loom supply costs?

With this thought in mind we began to pursue a course which we felt would enable us to reduce our loom supply costs. A weekly supply-cost record by loom sections, shifts, and department was initiated which enabled us to determine how much each loom fixer's supply cost was on his section for his shift. We summarized this information to give us the assistant overseer's supply cost of his shift, and we were in a position to compare supply costs for entire weave rooms for all shifts.

This procedure has stimulated considerable interest, and suggested revisions have resulted in further acceptance and interest from loom fixer to mill manager. An impressive reduction in loom supply

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Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance, and the $100 award will be made to the winner as soon as all entries are judged.

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► All contributions must be postmarked not later than midnight, April 15, 1959.

► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance — no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously and must not be submitted to any other publication.

Send your contest entry to: The Editors, TEXTILE INDUSTRIES, 806 Peachtree St., N. E., Atlanta 8, Georgia.

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costs has been effected in a short period of time.

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We are looking forward to still greater improvements and savings, for many supply parts and their manufacturers are in the forefront with new developments. Naturally we want the part at the best price which will give us the better life, consequently resulting in more potential savings.

Before initiating such a program to stimulate competition, it should be determined whether supply records (inventories, issue slips, etc.) are properly set up so that data compiled is on a truly uniform basis.

Many mill supply rooms are very loosely run and managed. Proper steps should be taken to correct any evils which exist, such as loom fixers having free access to supply room, issuance of supplies without proper authorization through failure to require a requisition signed by a duly authorized person, etc.

Quite often, upon taking supply room inventories, adjustments are necessarily made to compensate for shortages which would not exist if proper controls were maintained at all times by those responsible for the supplies.

Many mill owners and managers would be justly alarmed if they really knew to what extent their investments were being poorly accounted for when it comes to the matter of getting the most for their *supply dollar*.

The fact remains that the employees reflect the leadership they receive in this phase of manufacturing economy—just as is true in any other category, whether it is labor cost, raw materials, waste, off-quality, maximum speeds, efficiencies, etc. All of these factors reflect how successfully a mill's operation really is.

To summarize the matter: a good investment with good management, good leadership, and a foundation of good employees spells *success*.

CONTRIBUTOR No. 1085

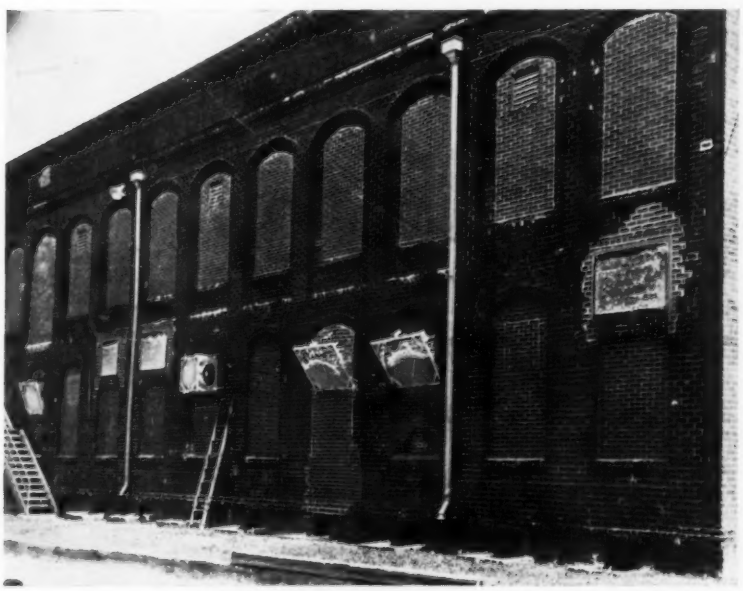
HOW OTHER MEN MANAGE

Lint screens keep mill yards free of fly

THE EDITORS:

Lint screens located at air exits around the mill serve to collect a major portion of fly and lint that would otherwise be blown about the mill premises. The screens are inexpensive and may be made in the mill shop. They may be installed a number of different ways (see illustration) and require cleaning at intervals ranging from once each work day to twice each week.

CONTRIBUTOR No. 1073



The combers tattled

THE EDITORS:

The owner of a large foreign mill, of which I was plant superintendent, recently showed me a sample of 1 3/32" Brazilian cotton and asked me what I thought of it. He could buy it for 23 cents a pound or 12 cents a pound less than American cotton of the same length.

After examining the sample I reported that, while maximum length was the same as for the cotton we were using, the waste content of useless (unspinnable) fiber or less than ½" staple length was very much higher. I pointed out that what he would save in price he would lose in quality, cost, and production. The ends would break down in every process in the plant, this despite the extra twist he would have to insert to get the cotton through spinning. The extra twist, of course, would necessitate lower front roll speeds and consequently lower production.

But he nevertheless bought and had delivered 3000 bales or about a three-month supply. When we got the cotton in process it was a sight to behold! The high waste content showed up first at the combers, where, without any change in comber setting, the waste percentage jumped from 14 to 34. There was, of course, a corresponding drop in sliver weight.

It is not generally known, but the comber is one of the best of barometers (better than human hands) for indicating waste content. It must be set and timed cor-

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rectly, however, if it is to do this.

It should be impossible to find a short fiber in comber sliver or to find a long fiber in comber waste, this despite there being 140 million fibers per pound.

I reported immediately the problem that the foreign cotton was presenting and was instructed to make a complete test run through the plant. I changed the comber settings to bring the waste percentage to 15 again, installed the draft gear needed to bring the sliver weight back to normal.

The stock ran so badly in spinning that we ended up with six added teeth of twist (from a 48-tooth to a 42-tooth gear) at the expense of production speed.

The breaking strength dropped from 2.10 to 1.60 per grain of size. When the yarns reached warping the owner realized that when one end stopped it brought the other 500 to a halt with it. When they reached the slasher he also realized that one broken end could bring 3000 to a halt. By this time even he had had enough, so he replaced the cotton with American stock. With much difficulty he resold the remaining Brazilian shipment in small lots.

To the practical spinner and weaver the subject of waste content should be of first importance. For example, an even or regular 7/8" cotton will make yarn as even and as strong as that produced from 1 1/16" cotton that is overloaded with waste. Cotton is marketed according to staple length and grade, but no one tells the customer how much, or what percentage, of the cotton actually is 1 1/16" or whatever length it is marketed under.

CONTRIBUTOR No. 1079

How does your twist variation compare with this?

THE EDITORS:

For a number of years twist tests and single strand tensile tests have been made in our laboratory on a more or less routine basis. Except in a few isolated cases we have never had to meet any twist specifications and these were principally on plied yarns.

Single yarn twist tests were made from time to time, particularly when spinning new yarns, or when changing rovings. It was the exception, rather than the rule, when the test results would correlate with the theoretical twists. We attributed this lack of correlation to the unreliability of the untwist-twist method and operator differences.

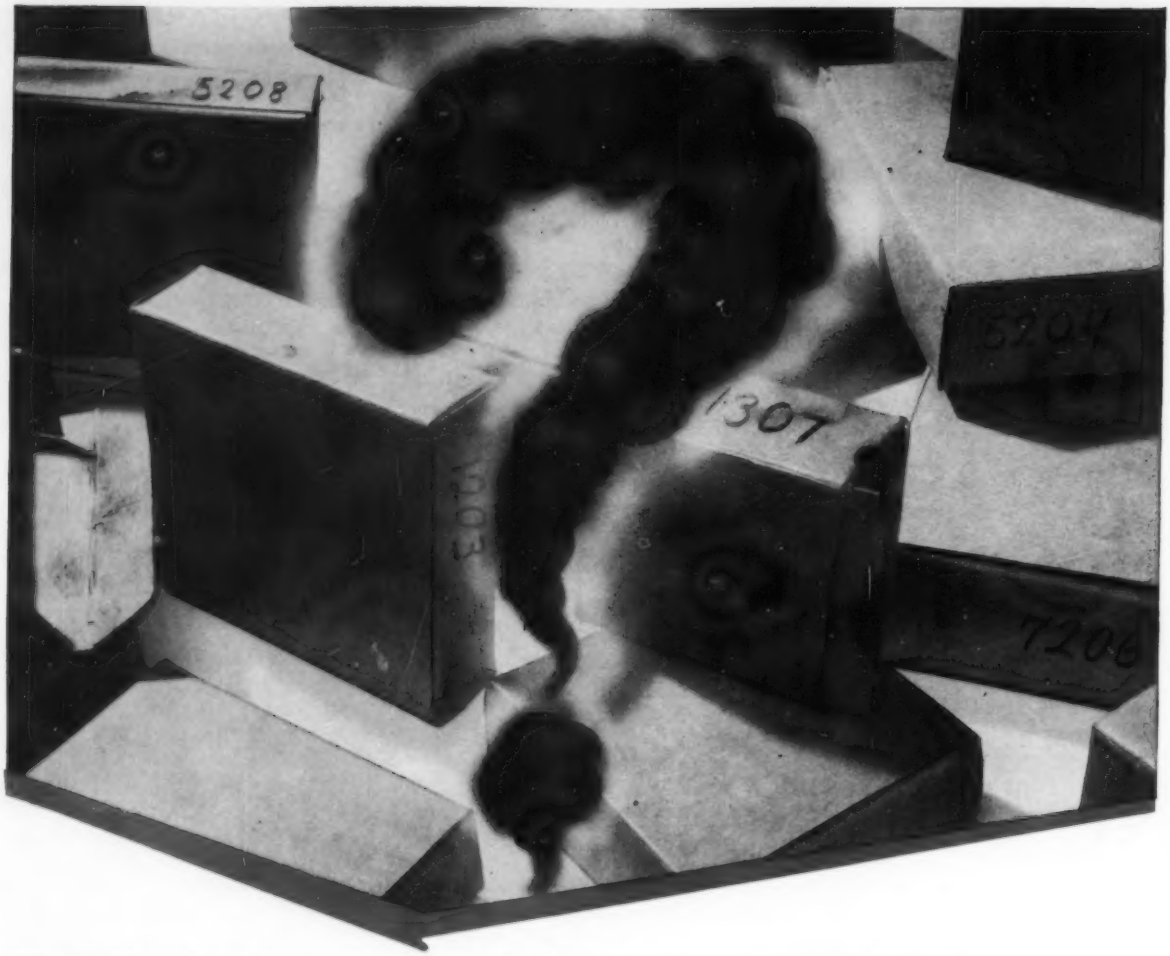
As to the single strand tensile tests, we have made some interlaboratory tests on filament yarns, but we have made practically none on spun yarns, particularly on cotton yarns. While our tests on filament yarns has shown very good correlation with other laboratories, our own tests on spun yarns have shown wide variation.

A few months ago we were asked to make some studies on cotton cable yarns to be used in the development of some special industrial fabrics. We made up five bobbins of a yarn and reported the results which included twist and single-end tensile strength and elongation.

Since there was considerable variation from bobbin to bobbin, we repeated the test, the yarn being made on the same spindles on the same twister and using the same gears and the same size trav-

TABLE I
Single-Strand Twist Analysis

Item No.	Type fiber	Yarn No.	No. of bobbins tested	No. of tests per bobbin	Test made	Test results	Coefficient of variation(%)
1	Cotton	6/3/2	5	5	Cable twist	7.95-Z	Not analyzed
2	Cotton	6/3/2	5	5	Cable twist	7.16-Z	Not analyzed
3	Spun rayon	6/1	16	2	Twist	7.81-Z	7.29
				3	Tensile	4.45 lb	9.70
				3	Elongation	20.32%	6.02
4	Spun rayon	7/1	16	2	Twist	9.08-Z	7.19
				3	Tensile	3.80 lb	11.24
				3	Elongation	19.68%	5.00
5	Spun rayon	3.30/1	16	2	Twist	5.86-Z	5.55
				3	Tensile	6.63 lb	9.21
				3	Elongation	15.70%	6.07
6	Cotton	5/1	20	2	Twist	9.66-Z	4.86
				3	Tensile	3.46 lb	9.72
				3	Elongation	7.78%	7.27
7	Cotton	6/2/2	10	15	Cable twist	8.62-Z	5.83
				10	Tensile	14.69 lb	8.09
				10	Elongation	12.03%	8.58
8	Cotton	6/2/2	5	20	Cable twist	7.93-Z	7.76
9	Cotton	10/1	8	20	Twist	14.31-Z	7.48
10	Cotton	7/1	8	20	Twist	11.94-Z	8.48



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23.8.8A

UNIVERSAL WINDING COMPANY

elers. There was practically no correlation between the two tests.

A similar correlation test was run on another cable yarn, with the same disappointing results.

We therefore concluded that perhaps we were making an insufficient number of tests, so we decided to make a larger number of tests and to evaluate them statistically. A series of such tests were made and the coefficient of variation computed. The results have made us realize that we should take a good look at our entire single strand testing program if we are to get meaningful results.

This brings us to the question which we would like to ask the readers of the "How Other Men Manage" department: namely, "How much variation should one expect when testing ring spun yarns and plied and cable yarns made on ring twisters?"

We are interested in the expected variation in twist, single-end tensile strength and elongation in both spun synthetic and cotton yarns.

We are listing some of our test results so that the readers may judge, from their own experience, whether our variations are very much out of line. (See Table 1, p. 131)

We wish to point out that Items No. 1 and 2 were run on the same twister, on the same spindles, and with the same gears and the same size travelers. Items No. 7 and 8 were run on the same twister with the same gears and similar travelers but not necessarily on the same spindles.

Perhaps we should expect this much variation on this type equipment, but it seemed rather high to us. We hope that some of the readers, who may have had experience on similar yarns on ring frames and ring twisters, can advise us as to the variation which we can expect under these conditions.

CONTRIBUTOR No. 1094

Locks Model E shipper motion

THE EDITORS:

We made a shipper lever safety catch for Model E looms so loom fixers would not have to stop the loom motor as a safeguard when working on a loom—to prevent someone from starting the loom prematurely and possibly injuring the fixer or causing a smash, damaged reed, or other loom or warp damage.

The device is simple. A ¼" stud is fitted with a wing and the unit painted yellow to make it easy to see. A hole is drilled in the lever lock of each loom to accommodate the ¼" pin. When inserted in the hole it prevents the shipper handle from being moved. Several hundred looms are so equipped. Only one (costing 15 to 20 cents) per loom fixer is required. The safety catch has prevented injuries to loom fixers as well as saving many damaged reeds and preventing smashes.

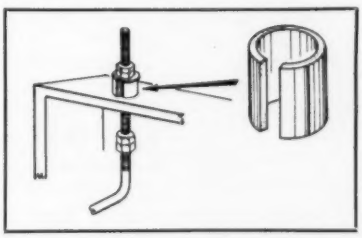
CONTRIBUTOR No. 1093

HOW OTHER MEN MANAGE

Uniforms spinning builds

THE EDITORS:

While attempting to standardize bobbin builds and sizes on our Whitin B. W. spinning frames, we hit on the idea of using interchangeable stops to vary the amount of free play between the picking rod lock-nuts on the builder motion. See the illustration.

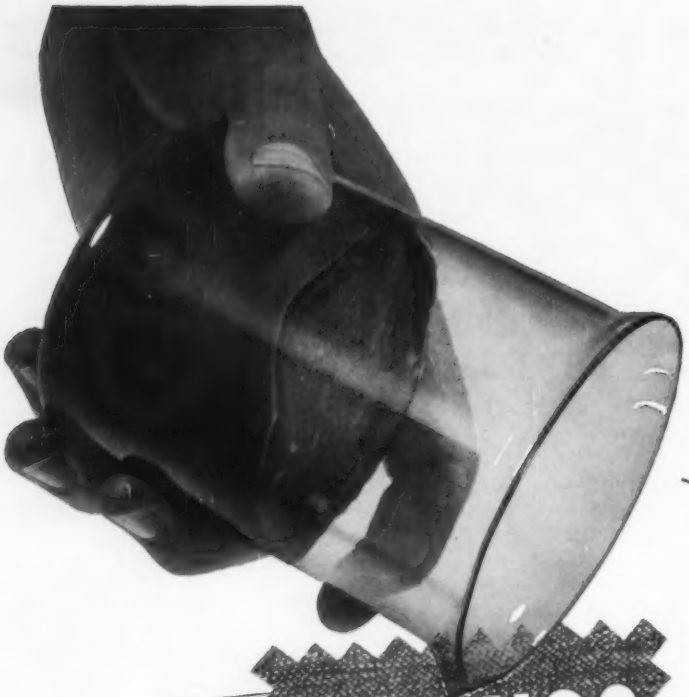


Previously when a yarn size change was necessary, and as this was a rule of thumb operation performed by the doffers, it often resulted in many hours of trial and error before the correct package size was obtained.

Once the lay gearing has been standardized, and suitably sized stops for various counts obtained by experiment on one frame, the final adjustment of the picking nuts may be made using the stops on the remaining frames, after which no further adjustment of the nuts should be required. The required change in picks is effected by inserting the appropriate stop, depending on yarn size, between the top lock-nuts and rail.

If plastic is used for these stops, they may be made in different colors to signify various yarn sizes.

CONTRIBUTOR No. 1003



MOYNOS®

even pump non-pourable pastes!

. . . and move corrosives without excessive wear!

Moynos can pump any textile liquid that can be forced through a pipe, even if they're highly viscous or corrosive.

A screw-like rotor revolving in a double threaded stator forms progressing cavities which move all fluids smoothly through the pump, including thickeners or starch size. Corrosive liquids like acid solutions, dye and chlorine do not cause internal wear, because the rotor and stator can be made of special resistant materials. Moyno is the only pump that can satisfactorily handle caustic alkali solutions without causing foaming or aerating.

Many textile mills have drastically cut downtime on mercerizing and sizing machines by installing Moynos to replace rotary pumps which wear quickly and lose capacity and suction characteristics.

Moynos are available in capacities up to 500 gpm; pressures up to 1000 psi. No doubt there are many steps in your processing flowsheet where Moynos can cut costs and improve liquid handling. Write for Bulletin 30 TI.

R&M

ROBBINS & MYERS, INC.

SPRINGFIELD, OHIO BRANTFORD, ONTARIO

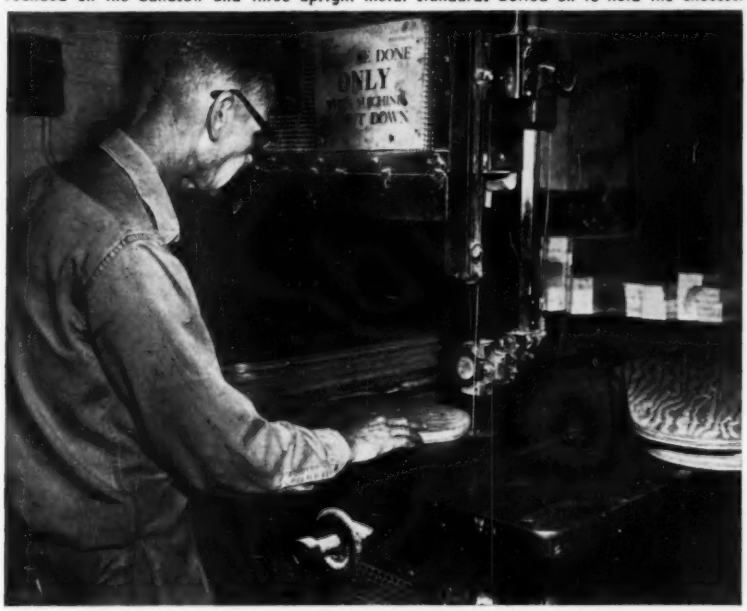
Plywood reduced spooler-room costs

A southern textile firm is saving up to 80% of the former cost of the boards used to hold cheeses in the spooling department. Lumber was originally used, and the cost of each board purchased ran as high as $2.75. The present ones are made in the mill shop from ⅞" AD fir plywood at a material cost of $0.57. Since the plant uses a great number of them (the average spooling and warping operation requires from 300 to 500) the saving in material becomes quite significant.

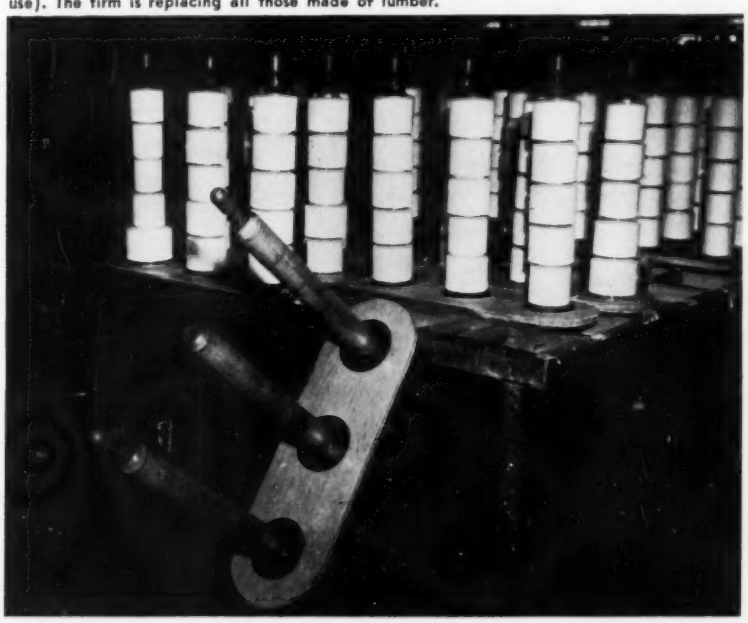
Originally the firm used ¾" plywood and switched to the ⅞" thickness to reduce chipping, but the change to the thicker grade was only a refinement, for chipping does not affect the board's performance. Splitting, the major cause of replacement among the boards made of lumber, is no longer a problem.

Douglas Fir Plywood Association

Fabricating the trident boards is simple. The ends of the 9" x 27" plywood boards are rounded on the bandsaw and three upright metal standards bolted on to hold the cheeses.



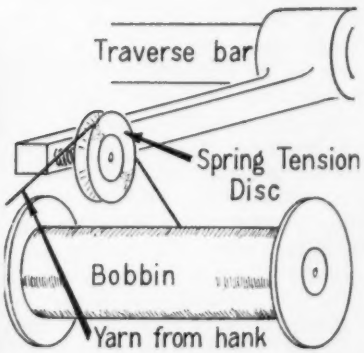
The boards must be able to "take it" and not split (splintering does not affect the board's use). The firm is replacing all those made of lumber.



Ups winding efficiency

THE EDITORS:

In winding from hank to bobbin, we have tried tension rods and various types of drags [tensions]. We have found when a poor yarn breaks often in trying to build a hard bobbin that it is the position of the drag that matters.



Instead of fixing the tension rigidly in one place, we make it take the place of the pigtail on the traverse bar. Being free to move across the bobbin, the tension will build a dense bobbin of the weakest yarn. The tension, as the illustration indicates, is a disk and spring type.

CONTRIBUTOR No. 1011
(England)

HOW OTHER MEN MANAGE

Got the answer to these sizing questions?

THE EDITORS:

There are a few aspects of warp sizing that I should like to see covered in the authoritative manner demonstrated in Warp Sizing. [Title of series of articles, by Paul V. Seydel, which appeared in TEXTILE INDUSTRIES for 1956-1957. —The Editors] They are:

1. Different counts of the same yarn, also different kinds of yarn such as cotton and rayon, worsted and nylon, etc., put on one loom beam. When this condition exists trouble can be had in weaving due to the difference in take-up of the varying yarns. This is often compensated for by sizing the yarn with varying amounts of tension at the slasher.

2. Fabrics with stripes of weaves different from the ground weave. One form of this is a satin weave stripe, probably reeded with twice as many ends-per-dent as the ground weave which may be plain weave. Here again take-up in weaving will vary even though the yarn count is the same for the whole warp. Varying slasher tensions is also the usual way of handling this problem.

3. Selvages. If selvages are not dressed properly at the warper they give trouble in slashing; if not slashed correctly trouble comes in weaving; also if the proper selvages are not used trouble occurs in the finishing operations.

Plied yarns, heavier than the body of the warp, are often used to give good results in weaving and finishing and avoid tight selvages, bowed cloth, and other defects. Warp sizing cannot correct all the errors in judgment that can be made in selecting the yarns, weaves, etc., used in making selvages, but good slashing practices can help in making good running selvages.

CONTRIBUTOR NO. 1071

Polyethylene film solves bleachery problems

A bleachery is taking advantage of three of the different characteristics of polyethylene film to assist in solving three of their most difficult operating problems. Polyethylene film is utilized as a room divider, as covers for the bleaching vats, and as covers for its large skids. In each instance, a different property of the film proves its worth and versatility.

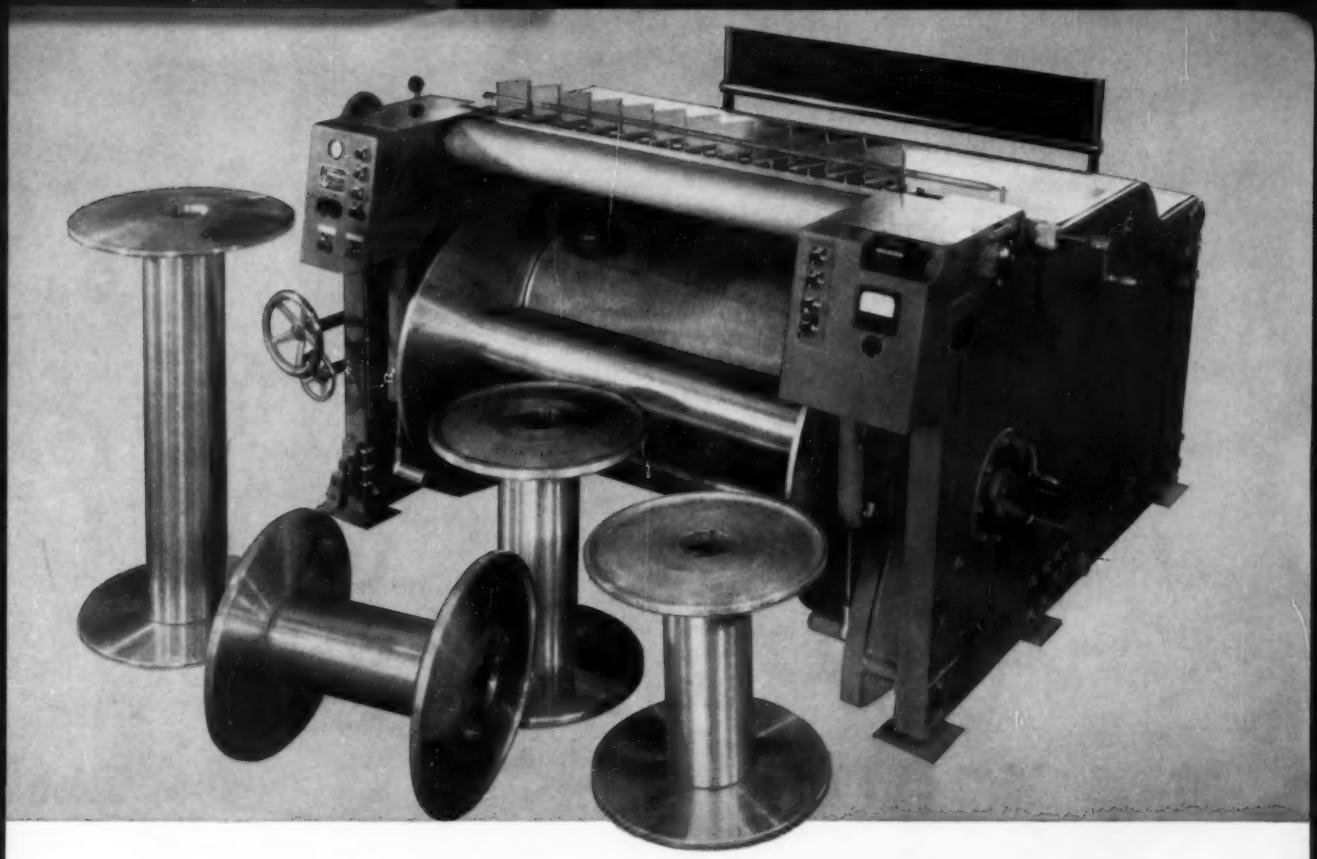
As a room divider, the film serves as a temperature barrier between the compressive shrinking room—where the temperatures are maintained at approximately 140 F—and an adjacent work area. In addition to minimizing the heat problem, the clear film transmits light; additional lighting fixtures in each area are unnecessary.

Because the film is unaffected by the chemical action of strong bleaches, the firm is using it as a vat cover during bleaching operations. In this application, the film prevents the evaporation of the expensive bleaching chemicals and eliminates the possibility of discoloration of fabrics only partially submerged near the surface of the vat.

In view of the conditions of high humidity that are prevalent in bleachery operations, moisture damage is a constant problem, particularly where fabrics must be stored for any period of time. Dust is also an almost unavoidable circumstance. To protect fabrics in storage, polyethylene film is being used as skid covers where it offers excellent protection to all fabrics.

Plastics Div., Koppers Co., Inc.

Because of its outstanding qualities as a moisture and dust barrier, polyethylene film is used as skid covers for fabrics, and it is also used in other applications at the bleachery, notably as a temperature barrier and as a bleaching vat cover to prevent evaporation and eliminate discoloration of fabrics during the bleaching process.



Use any of these beams on this Versatile Warper

The versatile Kidde-Sipp Warper Model 149B is built to take a 50" beam, up to 32" in diameter—BUT it can quickly be converted to take a 42" beam, or even two 25's or two 21's.

If you don't need this flexibility, of course, you can get Model 149A. This warper can be furnished to accommodate either a 50" or a 42" beam.

Both models are dependable and sturdy, as are all Kidde-Sipp warpers.

Here are some other features of Kidde-Sipp Model 149 Warpers:

- Speed range is 8 to 1 (75 to 600 YPM).
- Electric brakes have independent rheostats for synchronized stops.
- Pressure roller and diversion roller are synchronized by a timing belt.
- You can choose either a fan reed or a positive expansion reed.
- Hydraulic action makes beam doffing work a girl can do single-handed.
- Beam tape attachment helps keep ends set in position.
- You get predetermined revolution and yardage counters.

The Model 149 is part of a line of dependable Kidde-Sipp Warpers. We'll be happy to supply you with detailed folders, which describe every warper we have. Write to Kidde Textile Machinery Corp., Bloomfield, N. J. Or phone Mr. Ruddick at PIlgrim 8-8100 in Bloomfield.

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

Kidde

TEXTILE MACHINERY CORPORATION — BLOOMFIELD, NEW JERSEY

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Thermostable Diastafor desizing agent has given dependable performance for almost 50 years.

Diastafor desizes quickly, economically, dependably...always gives you uniform quality results.

New Diastafor LCD...in convenient high potency liquid form, desizes fast at temperatures up to 180°-200° F. Performance is outstanding in continuous process operations.

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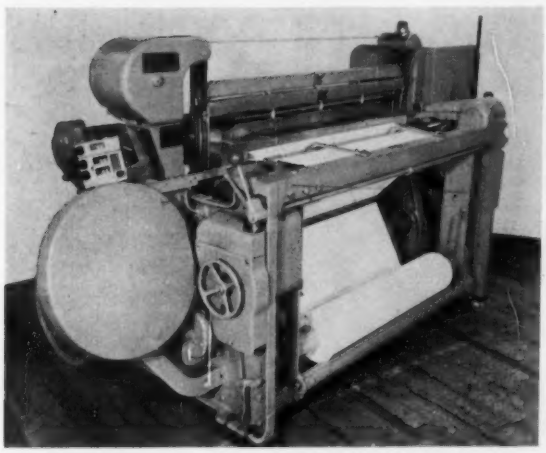
NEW PRODUCT PARADE

Machines and Equipment . . . Supplies and Services . . . Dyes and Chemicals . . . Books

Please note: Claims made in all of these announcements of new developments are of necessity based upon information furnished by the respective suppliers.—The Editors.



Shuttleless loom offers speeds of 200-250 ppm

Commercial availability of the Draper Shuttleless Loom has been announced. It is expected that this loom, as compared to a shuttle loom producing the same type of fabric, will provide the mill with the following advantages:

1 Increased production speeds
2. Economies in fixing and maintenance costs
3. Elimination of battery hands
4. Deduction of supply costs
5. Easier operation by weaver and fixer
6. Other materials handling savings because of larger filling, cloth, and warp capacity
7. Reduction in noise level

How the loom operates and the types of fabrics which have been woven to date in the manufacturer's laboratory at Hopedale are reported in the feature article which begins on page 54.

Draper Corp., Hopedale, Mass.

Do you want more data? Write ◂ or use card on page 157; list A-101

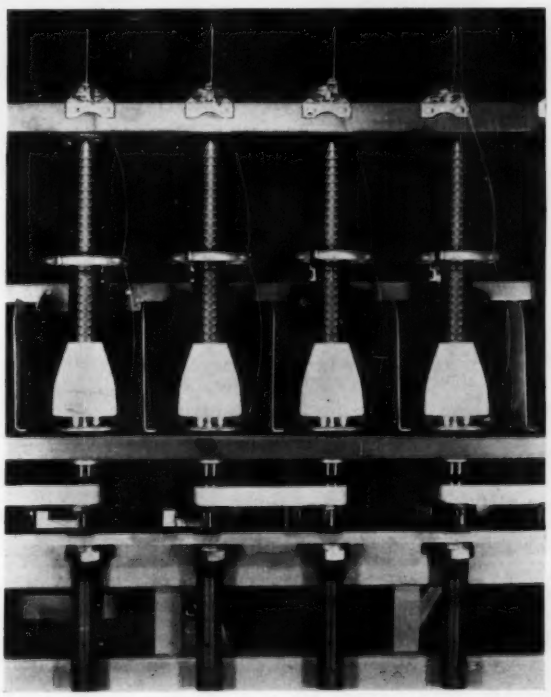
Automatic spooler makes 6-lb, 4° cone packaging

Developed originally to be used as a cone winder for supplying the filling package on shuttleless looms, the Type DD automatic spooler builds a 4° cone weighing up to 6.5 lb. Other processes for which the package may be used include backwinding, doubling, twisting (over-end) and knitting. Essentially the machine is the same as the Type D except for the design changes necessary to produce the tapered packages.

Provision for magazining the cones is made by putting a few turns of tail on the bottom of the cone starter, where it can be easily found and tied to the outer end of the following cone. This tail is put on in the Starter Maker, an accessory to the spooler, or provision can be made to insert it at the spooler.

Barber Colman Co., 1300 Rock St., Rockford, Ill.

Do you want more data? Write ◂ or use card on page 157; list A-102



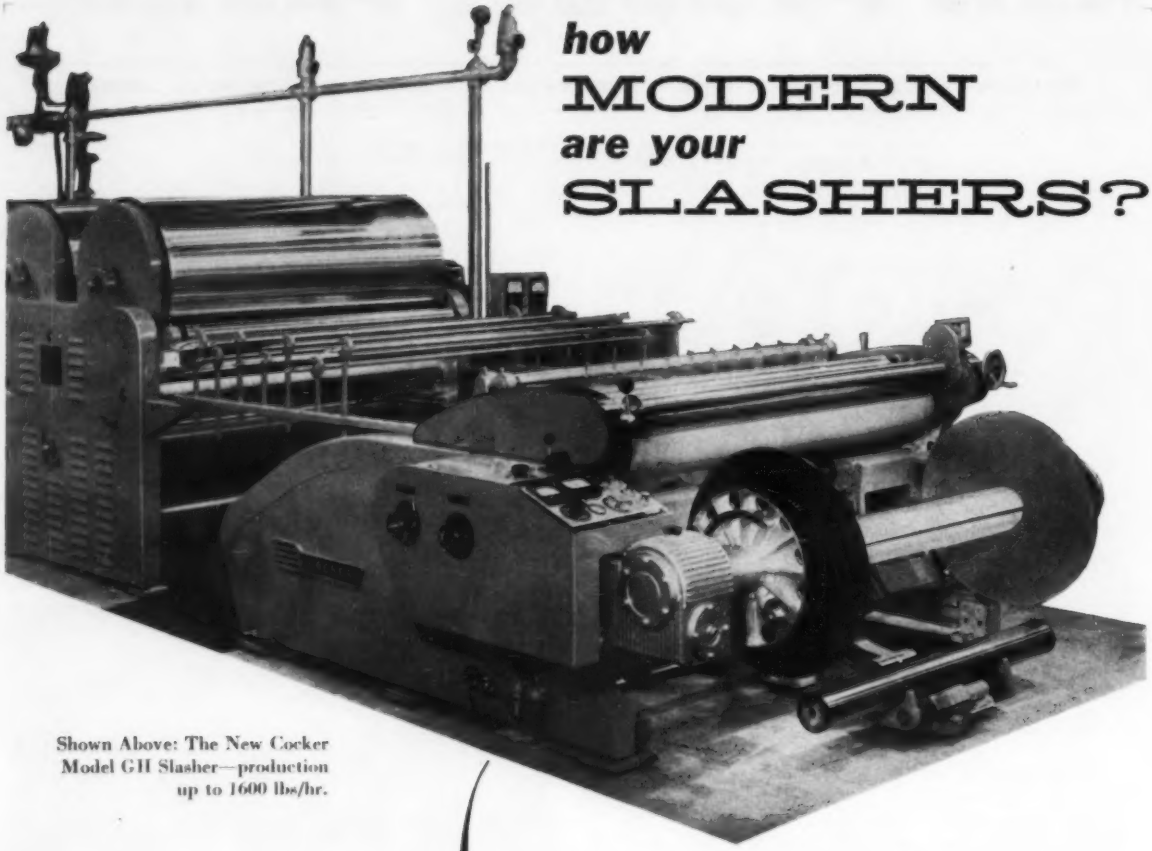
Single ring controls yarn ballooning

The UnaRing system of yarn balloon control employs a single ring, hinged to permit easy piecing up. Easily reversed, easily plumbed to the spinning ring, they can be set for each job run, starting position, length of stroke and effectiveness, and are lowered for doffing by a simple crank. A short separator is employed for localizing the ends-down but is not in the way during doffing. The rings are incorporated in the Arrow spinning frame.

Roberts Company, Sanford, N. C.

Do you want more data? Write ◂ or use card on page 157; list A-117

how MODERN are your SLASHERS?



Shown Above: The New Cocker Model GH Slasher—production up to 1600 lbs/hr.

Most of the important improvements on slashers were first introduced by Cocker. Many of them have since been adopted by others, but many valuable features are still exclusive on Cocker equipment. These features enable mills to produce more and better beams at lower costs. Here are some of them.

*Pat. Applied For

TELESCOPING TORQUE TUBE DRIVE*

A highly efficient and greatly simplified drive which eliminates troublesome belts, chains, sprockets, and projecting spindles. Costs less to buy and less to operate.

Timing belt drive to calender rolls to eliminate lubrication problems.

Quick release driving head.

Rapid traverse carriage for quick and easy doffing.

Micrometer adjustment for beam width.

100 tooth double sprocket and chain drive on cylinder section.

Selecto-Lift calender rolls and compensating ironing compressor.

These and many other modern features always found first on Cocker Slashers. The most modern in the World—and your best buy. Write for full information today.

COCKER MACHINE & FOUNDRY COMPANY

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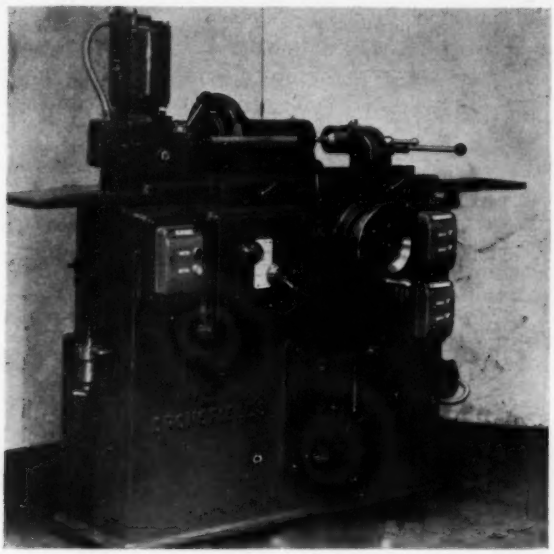
MAILING ADDRESS
Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

Drafting roll grinding equipment

The roller grinding machine No. 270 with hydraulic traverse is designed for buffing rolls covered with leather, cork, rubber, or any synthetic material, and it will buff rolls of 3/4" minimum diameter to 6" maximum diameter (maximum roll length it will accommodate is 20").

A micrometer dial is fitted for measuring the amount of



"cut" and a stop is provided which can be set for grinding a batch of rollers to the same size. A diamond wheel dressing tool is included.

An optional attachment available permits grinding rollers with ball or needle bearings without removing the shells.

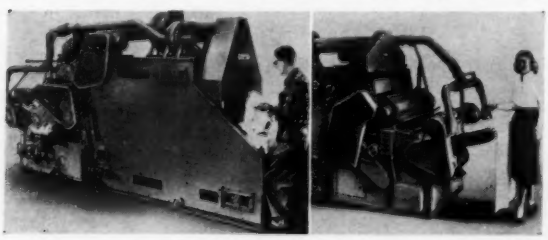
Dronsfield Brothers, Ltd., Atlas Works, Oldham, England.

Do you want more data? Write ◂ or use card on page 157; list A-103

Trims non-wovens, returns excess fiber to hopper

The Fibr-Savr is a self-contained system designed to fit all Rando-Webbers (40", 60", and 84") to trim either or both sides of the web and return the trimmed (unbonded) fiber to the feeder for reprocessing. Webs of natural and synthetic fibers, asbestos blends, etc., are trimmed in any increment within the following ranges: for the 40-inch machines, 23 to 40 inches; for the 60-inch machine, 33½" to 60"; and for the 84-inch units, from 46" to 84". The assembly fits into the same area as the conventional product web conveyor.

Guarded cutter knives are mounted on a shaft above anvils, geared together and power-driven from the condenser drive. The two knives are set for the desired width and held in exact position with a cam lock adjustment. A



Here's a Thinking Man's Booklet— FREE

This 32-page Mill Maintenance Cleaning Guide provides valuable information for all thinking textile men vitally concerned with the necessity of reducing operating expenses.

How this booklet can help you:

This illustrated booklet describes maintenance cleaning as it is being done in many large textile mills today. Data is based on plant-proved procedures streamlined to give the most efficient cleaning at the lowest possible cost.

Indexed for quick reference, booklet describes how to speed up and simplify such jobs as:

HUMIDIFIER MAINTENANCE
- slime and scale prevention
- filter cleaning
- rotor cleaning

MACHINERY MAINTENANCE
- cleaning heddles, harnesses
- cleaning looms, reeds
- rust prevention

PLANT MAINTENANCE
- floor cleaning
- paint stripping
- cleaning aluminum forms

WASHING OPERATIONS
- tar removal
- kier boiling
- wool scouring

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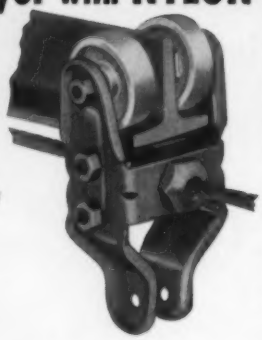
CLEAN!
AMERICAN "Cable-Way" Conveyor with NYLON WHEELS



Open T-rail track and trolleys are easily cleaned, with water or air hose.

Adaptable for explosion-proof installations.

Nylon wheels are almost noiseless.

No grease drippings. Most installations require no lubrication. Others minimum amount. Can be water-lubricated.

Galvanized or stainless steel cable.

Operates in moist conditions with minimum of maintenance.

The American "Cable-Way" Conveyor with nylon-wheeled trolleys requires grease lubrication only on the motor drive and idler sprockets. All-bolted track and suspension system makes installation fast and easy. Low-cost and dependable. Handles loads up to 250 lbs. per trolley.

(Left) Steel wheels are also available for average industrial installations.

CONVEYOR DIVISION
THE AMERICAN MONORAIL CO.
Fourth & Franklin Streets • Tipp City 24, Ohio

DRONSFIELDS' PATENT
ATLAS BRAND
EMERY FILLET

STOCKED BY
THE PRINCIPAL MILL SUPPLY HOUSES
AND CARD MAKERS

special telescoping roll supports the finished web as it passes to the conveyor apron.

The trimmed fiber is returned through a suction unit into a deceleration chamber that lowers the air velocity permitting the fiber to drop into the hopper without blow or interference with the flow of regular stock. The feeder and webber sections of the fiber return system, along with the two machines, can be separated for servicing. The suction lines are automatically sealed through self-aligning connection joints when the machines are returned to operating position.

Curlator Corp., East Rochester, N. Y.

Do you want more data? Write ◆ or use card on page 157; list A-104

Cams increase Abbott winder output 20 to 30%

Nylon cams are available for use in Abbott traveling spindle winders. The cams, machined from extruded nylon stock, were introduced to reduce the noise level, and the simple change immediately made it possible to increase machine speeds (from 625 ypm to 875 ypm, for example).

The noise level at the increased speed actually is lower than for the original speed.

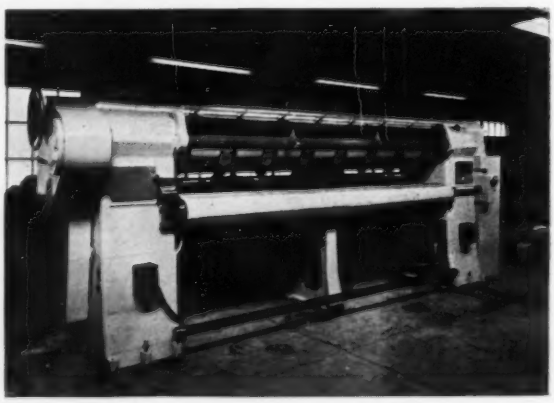
The reduction in cam weight permits the winding speed to be reached with less tire slippage on the power roll, consequently the speed is reached in less time than formerly was required and the package produced is more homogeneous. The cams are produced by The Polymer Corporation of America.

Abbott Machine Co., Wilton, N. H.

Do you want more data? Write ◆ or use card on page 157; list A-105

Exceeds 100 tufts per square inch

Tufting machines, available in widths of 35", 48", 64", 125", and 223", are being made in gauges of ⅛", 5/32", and 3/16" for cut or loop pile. Coarser gauges are available for candlewick production. Stitch density has an infinite range from approximately four to thirteen stitches per



inch with an increased range optional. Pile heights can be adjusted from a minimum of 1/8" to 1½". Tufting speeds range from a high of 900 rpm for candlewick machines to 700 rpm for the 223" models. The machines are pressure lubricated throughout with warning lights to indicate any failure.

Capable of handling almost any yarn that is evenly spun and reasonably free from knots, slubs, etc., the machines process satisfactorily a wide variety of yarns ranging from condenser spun cotton waste with a breaking strain under one pound to 100 per cent nylon.

The looping and cutting mechanisms are easily reached and maintained (looper is presented at 90 degrees to the needle) and, because of their design, require infrequent sharpening.

British Tufting Machinery Ltd., Broadway Court, Westminister, London S. W. 1, England.

Do you want more data? Write ◆ or use card on page 157; list A-106

Canteen service tailored to space and needs

A canteen service that can be tailored to fit any location in the plant or office can be selected to vend such items as salads, sandwiches, hot foods, pastries, and freshly brewed coffee. The exact components of the Canteen Servinette are determined by a survey of plant requirements, and installations are tailored to fit a length of wall, corner, or an irregular-shaped area to accomodate free-standing or built-in units.

Among the important benefits of the service are: (1) employee good will; (2) a saving in man-hours; (3) a saving in space; (4) eliminates costly feeding subsidy; (5) improves morale; and (6) eliminates in-line waiting.

Automatic Canteen Company of America, Merchandise Mart Plaza, Chicago 54, Ill.

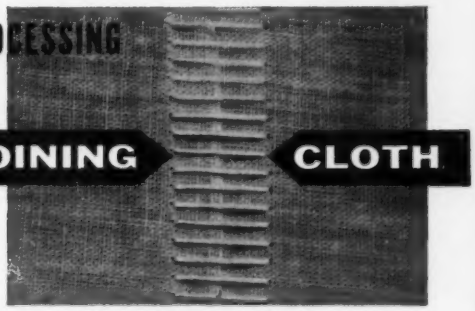
Do you want more data? Write ◆ or use card on page 157; list A-107

Fractional-hp motors "preserve" switches

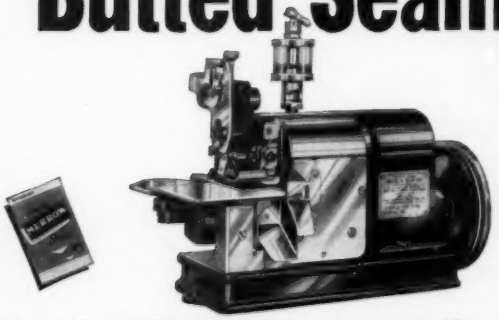
Starter switch failures caused by contamination of the atmosphere to which they are exposed are drastically reduced by a design that encloses the switch, capacitor, thermostat, and terminal board within fractional horsepower motors—sealed off from ventilating air streams. Especially recommended for use in dusty atmospheres, the units are made in ratings from ¼ to 1½ hp in the

for DYEING • BLEACHING • FINISHING • PROCESSING

HERE'S A BETTER METHOD OF JOINING CLOTH



MERROW Butted Seams



Joining piece goods end-to-end with a Merrow Butted Seam improves processing and saves material because:

- Material moves through continuously, speeding production.
- Seam opens *flat* under tension of processing.
- Lack of bulk at seam simplifies calendering, shearing, napping, printing, coating, filling, etc.
- Seam "gives" with material.

Machines may be used in conjunction with several different types of cloth handling equipment and are also available for joining *knitted* fabric for processing.

Write today outlining your particular processing problem. We'll be glad to make recommendations and submit sample stitches on your own material.

TRADE MARK REG

The MERROW MACHINE COMPANY

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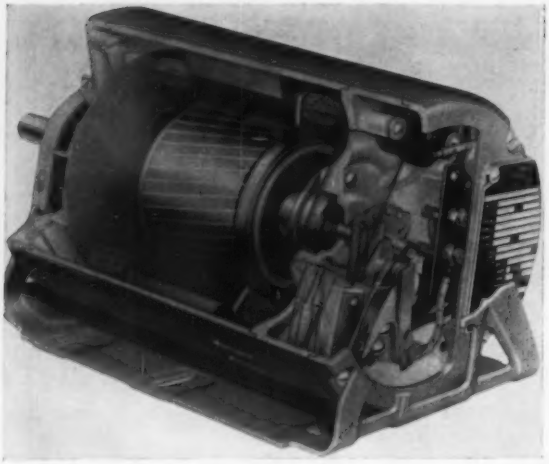


56 frame, and in blower motors in the 56 frame ranging from 1/3 to 3 hp.

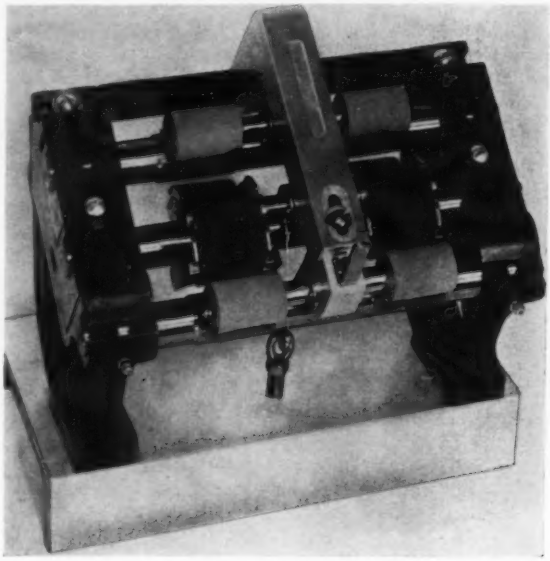
The motors contain prelubricated ball bearings, have rigid bases, and can be mounted in any position. A shorter-than-normal distance between bearing centers for a given horsepower reduces electrical noises and permits increased efficiency in transmitting magnetic forces through the air gap from the rotor to the stator. Locked bearings limit end play to the actual tolerances within the bearings. The end frames and totally enclosed compartment are made of aluminum alloy castings; the steel cylinder is made 1/32" thicker than normal to give added strength.

A. O. Smith Corp., Electric Motor Div., Tipp City, Ohio.

Do you want more data? Write ◂▸ or use card on page 157; list A-108

Drafting system uses positive weighting

Incorporated in the Arrow spinning frame, and featuring positive weighting and weight distribution, the PosiWate top roll drafting-suspension system is free from hooks and short springs. The aluminum housing lifts up and pivots



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Plants in Cedartown,
Crossett, Ark., Bogalusa, La.
Carlyle, Ill., Jacksonville, Fla.

around heavy back bar rods fastened to the roll stands.

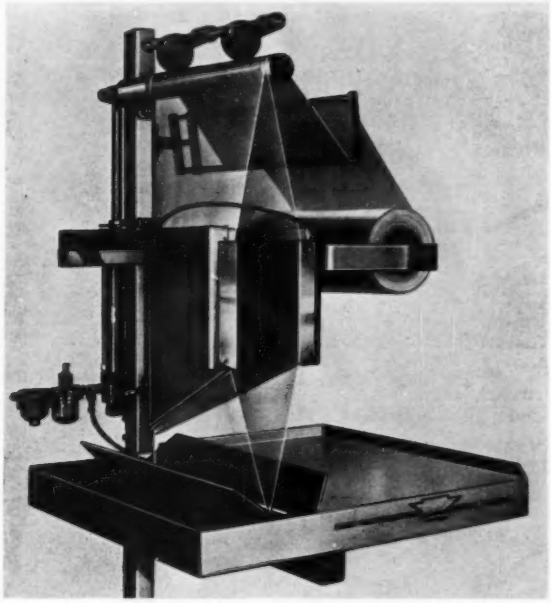
Two rolls of balls are used in each bearing (all three top roll lines are so equipped), packed in grease for life. Both cots revolve together, insuring easy removal of laps; and they may be buffed on standard buffing equipment without special attachments. Front and back top rolls are identical, permitting cycle buffing, and front line revolving clearers cover the full distance between roll stands.

Roberts Company, Sanford, N. C.

Do you want more data? Write ◂ or use card on page 157; list A-109

Bag making and packaging machine

An automatic bag making machine will prepare bags from ½" x 3" to 20" x 20" at rates from 1000 to 1500 per hour, depending on the bag size. Using polyethylene from rolls, the Model M may be mounted to service a



conveyor line or to be hand fed with such items as hosiery, underwear, sweaters, etc. Custom designs are available for larger bags and special applications.

Mehl Mfg. Co., Div of Sydney-Thomas Corp., 2057 Reading Rd., Cincinnati 2, Ohio.

Do you want more data? Write ◂ or use card on page 157; list A-110

Adjust frame speed by rheostat

Constant torque and horsepower are offered in the Rectiflow a-c adjustable-speed drives. Available in speed ranges of three to one, two to one, and one and one-half to one, the motors are offered in totally enclosed fan cooled, drip proof, and forced-ventilation enclosures. Recommended for textile use, the units are made in horsepower ratings of from 7.5 to 75 in unit-frame construction, and in bedplate coupled units when the horsepower exceeds 75. Speed control is through rheostats; accuracy is within five to ten per cent, no load to full load.

The adjustable-speed drive consists of a wound rotor induction motor and a d-c motor built on a common shaft. The associated equipment in the basic package is a set of

For Excellent Sequestration of Metals in Alkaline Solutions

Morene S is 10 to 20 times as effective in sequestering iron, copper, aluminum, etc. in alkaline solutions as are the standard types of sequestrants. You'll be delighted at the improvement in kier boiling, bleaching, and dyeing which results from the use of Morene S.

Morene S is soluble in caustic soda solutions, including mercerizing strength caustic. It is stable to peroxide and chlorine bleaching agents. When added to piling liquor in loading kiers it prevents the formation of insoluble iron and aluminum salts. Morene S improves bleaching by preventing degradation of fibers caused by localized bleaching action of heavy metals.

Are These Your Problems?

Migration of Dyestuffs?

The soils in many areas, especially in the South, contain up to 18% aluminum. It has been proven that as little as 5 parts per million (.0005%) of aluminum on cloth will cause migration of dyestuffs between a pad and dry can.

Iron in Peroxide Bleaching?
Iron in Dyeing?

Morene S preferentially sequesters iron and aluminum in kier boiling.

Morene S is full protection against these and other problems in your wet processing. Write for full information today.

MORETEX *Chemical Products,* INC.
314 W. Henry St., Spartanburg, S.C.
Established 1908 — Manufacturing Chemists

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SULFURIC ACID

TENNESSEE CORPORATION,

The Southeast's Leading Sulfuric Acid Supplier

Our complete control of raw materials from mine to finished product allows our total independence from elemental sulfur and enables **TENNESSEE CORPORATION** to accommodate and ship large tonnages of acid quickly and with minimum notice.

The sulfur contained in the ore we process yields Virgin Sulfuric Acid of highest quality free from organic matter, very low in iron, and in no way contaminated from regenerated or spent sulfuric acid sources.

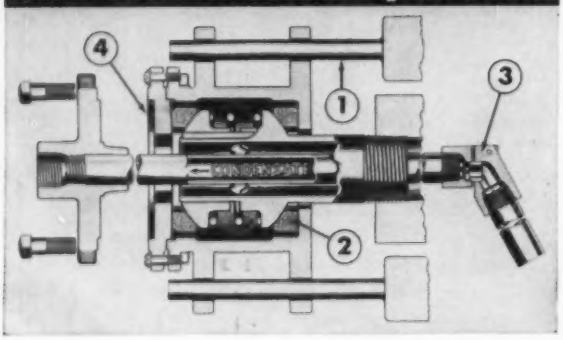
We produce all commercial grades and strengths of Sulfuric Acid from 60° Baume through the various Oleums.

QUALITY
RELIABILITY
ABUNDANCE
RAPID SERVICE
TECHNICAL ASSISTANCE
VARIETY OF GRADES AND STRENGTHS

We would welcome the opportunity to tell you our story—Call JAckson 3-5024, Atlanta, Ga. or write—

TC TENNESSEE CORPORATION
617-29 Grant Building, Atlanta, Georgia

For service on Dry Cans and 30" Slasher Cylinders



Type LJSP with Syphon Elbow

1. Support rods carry all the real weight. Sealing assembly "floats" freely inside. **2.** Seals without packing—needs no lubrication or adjusting. **3.** Syphon elbow replaces clumsy curved syphon pipe with two straight pipes, passes right through joint. **4.** Assembly plate holds parts in place when head is removed.

Johnson ROTARY PRESSURE Joints
First in the Textile Industry

Write for Catalog J-2002

Shows Johnson Joints for all needs, on dry cans, print cans, calenders, compressive shrinkage ranges, 5' and 7' cotton slashers, etc.

THE JOHNSON CORPORATION
815 Wood St., Three Rivers, Mich.

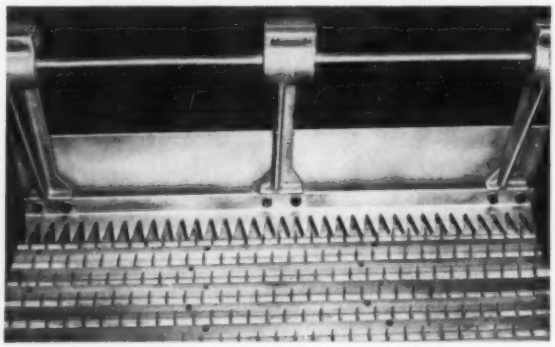
semi-conductor rectifiers for converting the slip power of the wound-rotor motor to d-c which is fed to the armature of the d-c motor. Rectifiers are also supplied to take a-c from the incoming power line to supply d-c to the d-c motor shunt field. A rheostat is supplied in the d-c field circuit for speed variation. This basic system allows the d-c motor to convert the slip power to mechanical output and permits speed control through the separately excited field circuit of the d-c motor.

Westinghouse Electric Corp., Motor Dept., Buffalo 5, N. Y.

Do you want more data? Write ◂ or use card on page 157; list A-111

Anti-friction hopper comb ups efficiency

A high-speed saw-tooth aluminum comb that runs in ball bearings at 240 strokes per minute is made for F-5 and F-7 feeders. This twice-the-normal speed for combs



strokes large masses of stock twice as often, knocks them down more positively, and breaks them up more effectively.

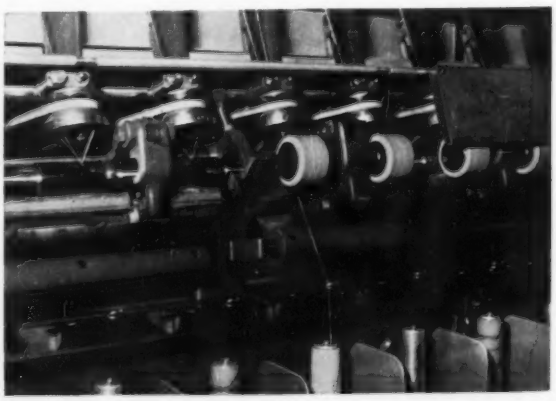
Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

Do you want more data? Write ◂ or use card on page 157; list A-112

Throw lever to reverse twist on woolen frame

The H-1 woolen spinning frame is built in a variety of gauges and in almost any number of spindles divisible by four. A chief feature of the unit is automatic underwinding and stopping when the doff point is reached.

Some of the other advantages offered in the Swiss-made



frames are: (1) combined motions of moving spindle rail, ring rail, and thread board to maintain constant tension; (2) special design of the false twist tube gives more positive hold to the roving by means of converging needles; (3) straight-line passage of roving and yarn from feed rolls through drafting element to thread guides above the spindles to simulate the action of a mule; (4) frame can be started and stopped any place along its length by tilting the roving guides; (5) gradual starting time automatically controlled; (6) ball bearing top rolls and jockey pulleys with estimated lubrication intervals of 10,000 operating hours; (7) single or double row of condenser bobbins (single row feeds both machine sides whereas double row feeds each side individually); (8) stepless variation of roving supply; (9) extremely rugged headstock construction; (10) spindle speed and front roll delivery speed tachometers built into headstock; (11) twist direction changed by moving a single lever in the headstock (this corrects for reversing direction of motor, shifting tape tension pulleys, and maintaining correct direction of rotation of drafting element); (12) cast-iron base plate under headstock; and (13) cylinder brake built into headstock.

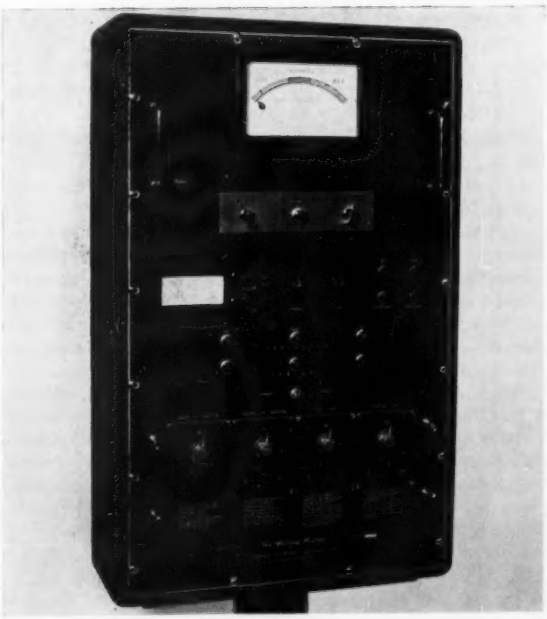
American Rieter Co., Inc., P. O. Box 777, Passaic Ave. and Clinton Rd., West Caldwell, N. J.

Do you want more data? Write ◂ or use card on page 157; list A-113

Slasher, dryer moisture controls

Developed in collaboration with Tubular Textile Machinery Corporation, the Model M-600 Moisture Monitor is a completely automatic moisture control for slashers and dryers. The unit requires no calibration and can be adjusted in terms of per cent regain or per cent moisture content for essentially all weights of fabrics, yarn counts, and fibers.

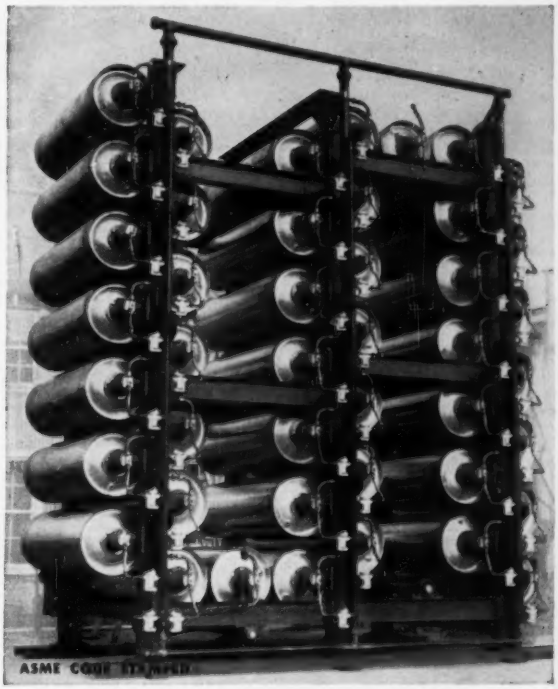
Controls such as "per cent cotton" and "per cent viscose" avoid essentially all bone dry correlations. Other features include simplicity, standard plug-in components, spare-parts kit, stop motions for wet warps or fabrics,



PROVEN SUPERIOR

In actual day to day operation where the real worth of machinery is tested, Sims new Stainless Steel 75 psi reversed dished head 44 Dry Cans* are proven superior. They require less horsepower . . . are easier on bearings . . . and save floor space with no loss in drying surface. And, the chain drive is on one side of the can, while the steam fittings are on the other side . . . permitting maintenance of the drive without time lost waiting for steam pipes to cool.

Furnished Teflon-coated if desired.



Fabricated and installed at Lanett Bleachery and Dye Works, Lanett, Alabama by Sims Metal Works.

FOR ECONOMY AND QUALITY
Our modern and progressive metal-working shops, our skilled craftsmen, our know-how—these are guarantees of quality. For custom tailoring of stainless steel, call, wire, or write *now*.

*U. S. PAT. OFF. NO. 2779104

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WEST POINT, GA.

Fabricators Since 1928

United States Supply Co., 888 Broadway, East Providence, R. I.
Harley D. Hohm, Inc., 128 Buist Ave., Greenville, S. C.
Friday Textile Machine & Supply Co., Gastonia, N. C.

3 million more U. S. citizens each year! Why not help yourself to an extra dividend from this growth market by applying the extra-speed features of exclusive DIAMOND FINISH ring designs?

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Makers of Spinning and Twister Rings since 1873
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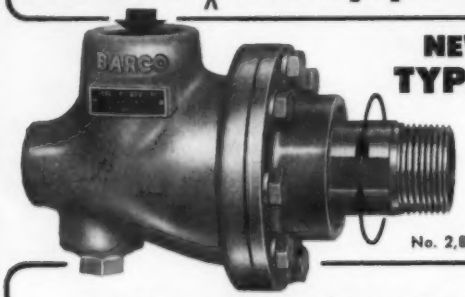
Need a *Better* rotary joint?



NEW TYPE C

Patent No. 2,836,439

-it's BARCO!

For countless applications, Barco's new Type C Rotary Joint will give you the best operating records you've ever had—*and for LESS COST!*

"CRACK-FREE" CHROME PLATED SLEEVE—A standard Barco feature. Minimizes corrosion, friction, wear. Stainless steel spring also standard.

RESISTS SEAL RING BREAKAGE—The spherical seal ring is under compression, not *tension*, loading. Self-adjusting for wear. Seal withstands shock loads and alternating hot and cold service.

WIDE SPACED BEARINGS—Two, instead of one . . . increased bearing area. No lubrication required. Lowest friction.

200 P. S. I. STEAM RATING—Heavy duty service at *no extra cost.* Eight sizes, ½" to 3". *Send for new Catalog 310 today.* **BARCO MANUFACTURING CO., 574-B Hough Street, Barrington, Illinois.**

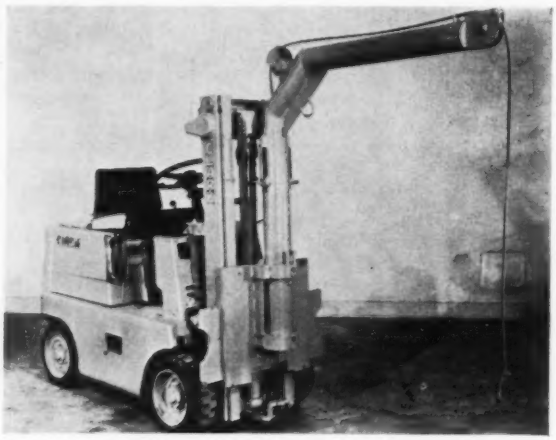
direct connection to recorders of all types, and interchangeable timers, each motor driven and calibrated directly in seconds and tenths of seconds to cover all possible speed ranges.

Strandberg Engineering Laboratories, Inc., Greensboro, N. C.

Do you want more data? Write ◂ or use card on page 157; list A-114

Cotton boom attachment for lift trucks

A cotton boom attachment for Clarklift fork trucks, is designed both for fast, economical handling of cotton bales and other bulky items. It is interchangeable with other attachments fitting these trucks of 3,000- to 5,000-pound capacities. The attachment is five feet long and



has a capacity of 700 pounds through a maximum lift height of more than 15 feet. A pulley and cable arrangement permits raising the load two times the rate of upright travel. Precise load spotting is facilitated by the swivel design of the boom assembly that enables the load to rotate 270 degrees manually and with little effort.

Clark Equipment Co., Industrial Truck Div., 24th St., Battle Creek, Mich.

Do you want more data? Write ◂ or use card on page 157; list A-115

Production control and monitor system

A production control and monitor system, called Telecontrol, provides factory floor control through the medium of a central control room which serves as the nervous system for an entire plant's production areas. The system provides facilities for recording, for each machine, on electro-mechanical counters: productive time; downtime; production within the shift; and the number of units needed to complete filling an order. The central control room serves as a clearing house or monitor, being able to direct foremen on the floor to the areas where machines are down or are about to be down.

When all is going well in the plant (all machines running), the signal lights (there are two for each machine), counters, and timers quietly register productive efforts. The moment trouble occurs, however, signal lights alert the personnel in the control center who establish direct voice contact with the foreman on the factory floor and thus alert him.

Control Systems Co., division of Hancock Industries, Inc., Jackson, Mich.

Do you want more data? Write ◂ or use card on page 157; list A-116

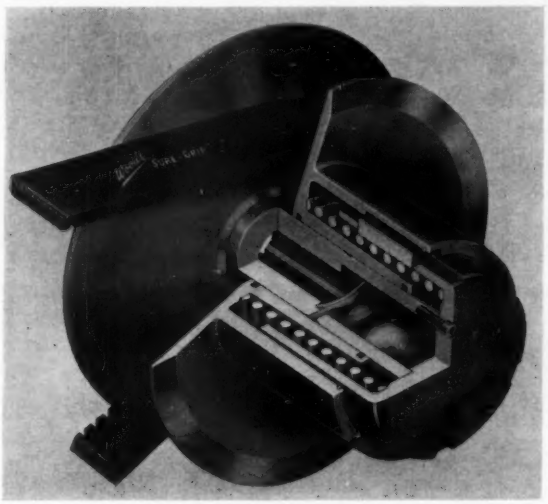
Equipment Briefs

Light bulbs for high voltage service are designed to offset the high cost of labor involved in relamping in industrial buildings. Made with a 230 to 250 range voltage, the bulbs have a 2500-hour life compared to 750 to 1000 hours for general service bulbs and are available in a range from 100 to 1500 watts. The Extended Service lamps are especially recommended for use in hard-to-get-at places such as signs, towers, tanks, etc.

Westinghouse Electric Corp., Lighting Div., 1216 W. 58 St., Cleveland 2, Ohio.

Do you want more data? Write supplier or use card on page 157; list A-201

Variable-speed pulleys incorporate a design that eliminates fretting corrosion as well as sticking and freezing. Bearing surfaces are reoiled from an oil reservoir with each rotation of the pulley. The pulleys use nylon-faced rubber keys, located outside the bearing surfaces, to transmit the power from the stationary to the moving



flange through a removable sleeve cap. The pulleys will run indefinitely at set speed without sticking. To change the pulley speed a handwheel is turned to move the motor toward or away from the pulley. Five pulley sizes are offered, rated respectively two, three, five, ten, and fifteen horsepower.

T. B. Wood's Sons Co., Chambersburg, Pa.

Do you want more data? Write supplier or use card on page 157; list A-202

Flat belting with plastic core offers high tensile strength and great coefficient of friction. Made with outside layers of chrome leather sandwiching a laminated plastic core, the belting permits narrower belt width and greater speed variation and more precise speed control on cone drives. Belt speeds of 10,000 feet per minute and higher are possible with the product which is made in load capacities of 500 hp and over. Called Nycor, it is oil, moisture, and shock resistant.

Graton & Knight Co., Inc., 356 Franklin St., Worcester 4, Mass.

Do you want more data? Write supplier or use card on page 157; list A-203

A series of lubricating oils (Vexilla) offers the following advantages: (1) high resistance to oxidation—they do not thicken in storage and thin out at high temperatures; (2) no gumming; (3) prevent bearing corrosion—contain rust

The Laurel Leaf

BUSINESS MAGAZINE EDITION

IT'S NEW !
LAUREL METROSOL B

Here's a new Laurel synthetic fulling compound prepared particularly for fulling woolen fabrics and wool-synthetic blends.

Laurel METROSOL B has shown excellent results over a wide range of fabrics used for men's and women's wear, where it produced goods with a good cover and excellent hand.

Results obtained on these goods, which cover a broad range of weights and constructions, are equivalent to those obtained with low titre soap. Desired shrinkage in both head and width is obtained well within normal fulling times, and ether extractibles following scouring are usually 0.2% less.

Laurel METROSOL B is a clear amber colored liquid which dissolves readily in water. It is free rinsing. Fulling solutions prepared with Laurel METROSOL B and soda ash are clear, stable, do not separate, and require no cooking. These properties can effect savings for you in handling and in steam. And, further savings can be effected since Laurel METROSOL B is stable in the presence of soda ash concentrations. This will enable the preparation of strongly alkaline fulling solutions, which will permit the fulling of cloth carbonized in the grease without first neutralizing the goods in a soda ash bath. Thus, an entire processing step can be eliminated.

Like to know more about Laurel METROSOL B? Write for complete details and ask, too, for a generous free sample.

Laurel Brand — 50 YEARS OF SERVICE TO INDUSTRY 1909-1959

Laurel SOAP MANUFACTURING CO., INC.
TIOGA, THOMPSON & ALMOND STS., PHILA. 34, PA.

Warehouses: Paterson, N.J. Chattanooga, Tenn. Charlotte, N.C. Greenville, S.C.

NEW PRODUCT PARADE

inhibitors; (4) readily removed from cloth, etc., with regular scouring methods; and (5) have outstanding wettability (surface tension allows uniform wiping onto surfaces being lubricated).

Shell Oil Co., 30 Rockefeller Plaza, New York 20, N. Y.

Do you want more data? Write supplier or use card on page 157; list A-204

Eighteen-inch seamless sliver cans are constructed from seamless tubes of extra-tough, specially conditioned vulcanized fiber. An inner coating insures smoothness, resists scratching by can springs, and can't become soft or sticky in contact with blended or synthetic fibers. Available in 42" height only, the cans won't crack, splinter, split, or snag.

Spaulding Fiber Co., Inc., Materials Handling Div., 310 Wheeler St., Tonawanda, N. Y.

Do you want more data? Write supplier or use card on page 157; list A-205

High-compression calender rolls make possible improved 80- to 90-lb laps on most pickers. The complete assembly consists of steel calender rolls with heavy-duty roller bearings and hardened-steel cut gears. Two bearings in each housing extend roll and bearing life. Made for Kitson or Saco-Lowell pickers.

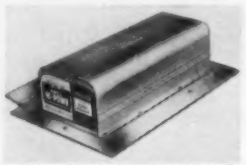
Kirkman & Dixon Machinery Co., Greenwood, S. C.

Do you want more data? Write supplier or use card on page 157; list A-206

Relubricatable ball bearing pillow blocks feature improved seals, a redesigned housing for greater strength, and over-all streamlined appearance. Designated LSA (standard) and LSAO (heavy duty) series they are offered in sizes up to and including 2 15/16" in the LSA series; up to and including 3 15/16" in the LSAO series.

The Fafnir Bearing Co., 37 Booth St., New Britain, Conn.

Do you want more data? Write supplier or use card on page 157; list A-207



Nonelectric plate magnets (Series 16) have been redesigned for strengthening both construction and magnetic pull. A full range of styles for installation on either wood or steel is available in units that are sealed for life against loss of magnetic strength, insulated against loss of magnetism to surrounding metal, and are designed to render incorrect installation impossible. Specially designed face plates can be provided to facilitate separation of fine or semi-magnetic particles, or removal of wire strands of spherical objects which might normally constitute a problem.

Eriez Manufacturing Co., Erie 6, Pa.

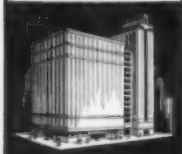
Do you want more data? Write supplier or use card on page 157; list A-208

Automatic checkweighing machines that also permit classifying, recording, and sorting are available in several models. Model 145 has an in-line "walking-deck" type transfer mechanism; Model 144 has a rotary transfer table mechanism (144 and 145 operate at speeds of 30 weighings per minute). The Model 1200 includes re-

The DINKLER-TUTWILER

The ST. CHARLES

The DINKLER-ANDREW JACKSON


The DINKLER PLAZA

The DINKLER-JEFFERSON DAVIS

HOTELS
THE DINKLER PLAZA
Atlanta
THE DINKLER-TUTWILER
Birmingham
THE DINKLER-JEFFERSON DAVIS
Montgomery
THE DINKLER-ANDREW JACKSON
Nashville
THE ST. CHARLES
New Orleans

MOTOR INNS
THE JAMAICAN
Jacksonville, Fla.
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THE BELVEDERE ICE RINK
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America's Most Exotic, Exciting, Exceptional Restaurant in Decades

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The LUAU

The BELVEDERE

The JAMAICAN

AVOID
SPINNING ROOM
DISRUPTION!

There are many, many reasons and causes for machine failure presenting the costly problem of "Down-time". Some of these every day problems are unforeseen - - - BUT

the foresight of . . .
ANDERSON SHIELDS
will reduce . . .
CHIPPING — SPLITTING
BREAKING
of your . . .
SPOOLS AND BOBBINS

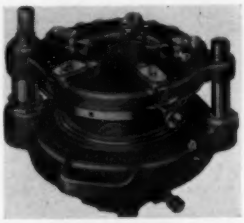
TEXTILE SHIELD CO., INC.
LAWRENCE, MASS., U. S. A.

cording, counting, and control devices—the Selectrol Automatic Checkweighers are available in models to handle products from a few grams up to several pounds of weight at speeds up to 120 per minute. Highly sensitive, the units are capable of proving weight accuracies in the range of 1 part in 5,000 to 1 part in 20,000. Automatic transfer mechanisms place the commodities on and remove them from the scales with a minimum of impact. The control system consists of direct-reading crystal photocells mounted alongside the optical reading scale.

The Exact Weight Scale Co., 528 E. Town St., Columbus 15, Ohio.

Do you want more data? Write supplier or use card on page 157; list A-209

A geared pipe threader threads 4", 4½", 5", and 6" pipe or conduit with just one set of dies that are cam activated and can't fall out. Size setting is fast, easy, and positive. No bushings are necessary. The plate-type workholder sets to size before threader is placed on pipe. A single screw is tightened to secure the workholder to the pipe. Designed for power drive or hand operation, the No. 161 is regularly equipped with a ratchet handle. Other features are closed chaser slots to keep out dirt, milled-in thread wipers that prevent chip damage, and large loop handles for easy, nonslip handling.



The Ridge Tool Co., Elyria, Ohio.

Do you want more data? Write supplier or use card on page 157; list A-210

Self-propelled fork trucks for pallet handling are driven by a propulsion wheel driven hydrostatically through a pump connected to a 12-volt, high-torque motor. Tests show that in 70 minutes on full charge of the batteries a Safeway Fork Truck moved forty pallets with 1000-lb loads a distance of 60 feet, then stacked those pallets four high into 10 stacks—handles pallets in aisles that are narrower than the diagonal of the pallet. The propulsion unit, called the Load Jockey, can be field attached to most battery-powered portable elevating trucks other than Safeway.

The American Pulley Co., Materials Handling Div., 4200 Wissahickon Ave., Philadelphia 29, Pa.

Do you want more data? Write supplier or use card on page 157; list A-211

Storage racks, construction platforms, etc., can be quickly and economically built from slotted angle steel that is perforated with recurring patterns of holes and slots to permit easy assembly. The AIM brand angle iron is available in two sizes: 225-80 (2¼" x 1½" x 0.080") and heavy duty, 300-104 (3" x 1½" x 0.104"). Structural bolts are also provided; no welding nor drilling necessary.

Acme Steel Co., Fabricated Materials Div., Chicago 27, Ill.

Do you want more data? Write supplier or use card on page 157; list A-212

Fluid flow meters measure full scale flow rates as low as 0.1 gallons per minute of such liquids as starch solutions, pigment dyes, and hydrogen peroxide. The Magnetic Flow Meters are developed for 1/10" and 3/16"flow lines and have an over-all system accuracy of plus or minus 1.0 per cent of scale. Unaffected by changing conductivity,

AMERICA'S SPRING STEEL DISTRIBUTOR

We have had over fifty years experience furnishing steel for both builders of TEXTILE MACHINES and makers of replacement parts for KNITTING MACHINES.

Modern Slitting and Shearing Equipment
WARD STEEL CO.
87-G RINDGE AVE. EXTENSION
CAMBRIDGE 40, MASS.
PHONE—
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Caledonian Dye Works
DYERS AND BLEACHERS
Cotton, Rayon and Synthetic Yarns
Perforated Tube, Skein and Warp Form,
Narrow Fabric Dyeing and Bleaching,
Warp Sizing, Mop Yarn and Hair Net Dyeing
Emerald and Westmoreland Sts.
Philadelphia 34, Pa.

TEXTILE INDUSTRIES
TENDS TO ITS
KNITTING
WITH A SPECIAL SECTION
EACH MONTH!

from thread to cloth

SPRAYING SYSTEMS

SPRAY NOZZLES

for better, faster production

Take advantage of Spraying Systems' complete choice of nozzle types and capacities, to select the EXACT nozzle to do the job best. Typical nozzles include:

PNEUMATIC ATOMIZING NOZZLES—for marking, coating and related uses. Designed for manual or automatic operation.

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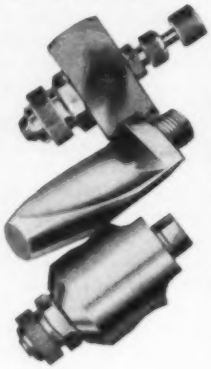

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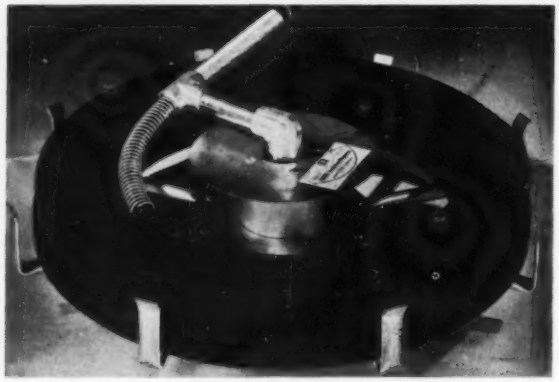
the units measure any fluid with conductivity greater than 100 micromhos, are easy to install, and are free from maintenance. It uses electronic Dynalog indicators or recorders in which alarms can optionally be incorporated.

The Foxboro Co., Foxboro, Mass.

Do you want more data? Write supplier or use card on page 157; list A-213

A steel strapping dispenser weighs only 12 pounds and requires only a slight effort to operate. The E33 can be loaded with a coil of steel strapping by one man in less than a minute. Handling any steel strapping from ⅜" x



0.010" to ¾" x 0.023", it allows packaging speed to be increased while reducing operative fatigue. The strapping coil is never lifted.

Acme Steel Co., 135th St. and Perry Ave., Chicago 27, Ill.

Do you want more data? Write supplier or use card on page 157; list A-214

A ball bearing, pressed steel take-up unit is available in two basic sizes covering eight shaft dimensions. It can be mounted using either guide-type or bolt-type methods and can accommodate misalignment without adjustment. The built-in self-alignment of the ball bearing will offset differences in take-up on either side of the shaft.

The Fafnir Bearing Co., 37 Booth St., New Britain, Conn.

Do you want more data? Write supplier or use card on page 157; list A-215

A split-head hammer with nylon faces permits fast changing of the impact surfaces and is designed to protect hammered surfaces from contact with the metal mold that holds the nylon pads. A large nut under the head is backed off to remove the pads and is tightened in place to secure them. Moisture, heat, and acids do not affect the faces.

Garland Mfg. Co., Water St., Saco, Me.

Do you want more data? Write supplier or use card on page 157; list A-216

Roof insulation is available in 1¾" thickness, and because of its closed cellular structure it (Foamglas) can be used without the customary vapor barrier.

Pittsburgh Corning Corp., Pittsburgh 22, Pa.

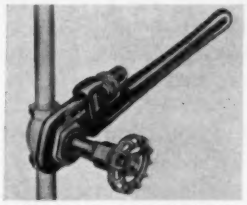
Do you want more data? Write supplier or use card on page 157; list A-217

A time delay device guards against magnetic coil drop out during momentary voltage dips, failure due to lightning, etc. The monitor incorporates a variable adjustment from 0 to 10 seconds and acts to restore power to the coil being protected when the duration of the failure does not exceed the preset limit. Made by the Elastic Stop Nut Corp., the standard units are for 120-volt operation

(other voltage ratings and timer ranges are available) and are sold with a guaranteed accuracy within 10 per cent.

James Hunter, Inc., 745 Lowndes Hill Rd., Greenville, S. C.

Do you want more data? Write supplier or use card on page 157; list A-218



An adjustable four-side-jaw wrench called the Hex Wrench gives time-saving, positive grip on hex nuts, square nuts, valve packing nuts, and unions and gas cocks, rough or finished. With the jaw easily removed and put on, the wrench is equipped with a guaranteed housing and a comfort-grip I-beam handle.

The Ridge Tool Co., Elyria, Ohio.

Do you want more data? Write supplier or use card on page 157; list A-219

A material that locks threaded fasteners will not permit the fasteners to work loose but permits their easy removal with ordinary tools. When a drop of "Loctite" is applied to metal nuts, bolts, and screws, the liquid hardens into a tough plastic seal that provides a locking action extending over the entire surface of the engaging threads. The locking action prevails even if the fastener is loosened or tightened, and is destroyed only by removing the bolt from the nut. In this event a reapplication of Loctite quickly restores the locking action. It may be used on all metals except zinc and cadmium, a special activator being available for these surfaces.

Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.

Do you want more data? Write supplier or use card on page 157; list A-220

A ring traveler containing a plated, satin-smooth finish has been known to increase traveler life from a 12-hour changing cycle to a minimum four-week cycle. With its increased life the traveler reduces necessary inventories, and with its finish it resists rust—high humidity, even handling does not destroy its finish, promote rust, etc. Additionally it prevents traveler loading, and by so doing it decreases the number of slubs ordinarily introduced from that source.

Carter Traveler Co., Div. of A. B. Carter, Inc., Gastonia, N. C.

Do you want more data? Write supplier or use card on page 157; list A-221

Pipe fittings that enable one to see what is going on inside condensate lines also provide correction for expansion and misalignment. The Expansion Joint and Piping Compensator is available with or without the sight glass indicator, absorbs normal steam line expansion, can be rotated 360 degrees to bring the sight glass within easy view, and is built to permit about 10 per cent flexing to offset pipe strain and misalignment.

Rotherm Engineering Co., Inc., 7280 West Devon Ave., Chicago 31, Ill.

Do you want more data? Write supplier or use card on page 157; list A-222

Capsule-size mercury switches are designed for use wherever a minimum of operating energy is available and space is limited. Weighing only 1.8 grams with leads attached, the switches (designated AS419A1) may be actuated by slow, snap, or fast-tilting action. Each switch may be mounted in any position through 360 degrees around its longitudinal axis.

Micro Switch, Div. of Minneapolis-Honeywell Regulator Co., Freeport, Ill.

Do you want more data? Write supplier or use card on page 157; list A-223

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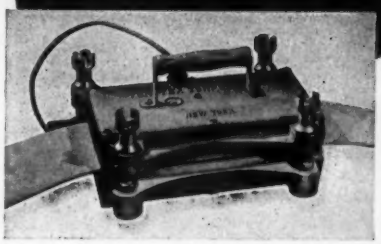

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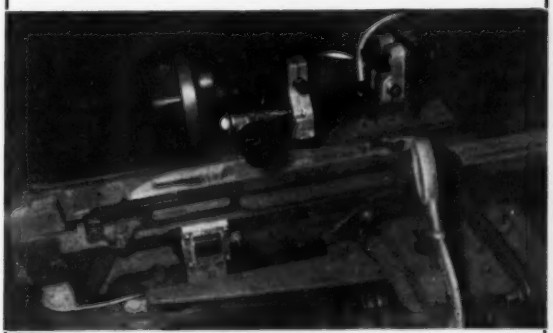

Optical Electronic Feeler On Draper Loom

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1-1 THE PENFORD GUMS. Catalog is both technical and descriptive, with information on the characteristics, properties and uses of various gums. Penick & Ford, Ltd., Inc., 750 Third Ave., New York 17, New York.

1-2 POWER TRANSMISSION. Bulletin describes complete line of sheaves, V-belts, pulleys, pillow blocks, flange units, take-up bearings, couplings and timing belt drives. T. B. Wood's Sons Co., Chambersburg, Pa.

1-3 SPIKED APRON MAGNET. Bulletin describes powerful, low cost spiked apron magnet. Includes specifications and simple table chart for figuring the magnet you need. Eriez Mfg. Co., Erie, Pa.

1-4 SOLVE HANDLING PROBLEMS. Booklet shows how various materials handling problems have been solved with savings in time and money. Cleveland Tramrail Div., The Cleveland Crane and Engineering Co., 1053 East 289th St., Wickliffe, Ohio.

1-5 FIBER QUALITY CONTROL. Brochure describes complete line of instruments for determining fiber properties, including synthetics. Special Instruments Laboratory, Inc., 312 West Vine Avenue, Knoxville, Tennessee.

1-6 NON-WOVEN FACT FILE. File describes non-wovens, lists advantages and gives facts on the market for non-wovens. Curlator Corp., East Rochester, New York.

1-7 CHEMICALS CATALOG. Expanded and completely revised, textile chemicals catalog describes the composition, properties and application of Antara products. Antara Chemicals, 435 Hudson St., New York 14, N. Y.

1-8 TEXTILE CONDITIONERS. New literature on five groups of fatty nitrogen derivatives whose characteristics make them beneficial as textile conditioners. General Mills' Chemical Div., Kankakee, Illinois.

1-9 HEAVY DUTY SWITCHES. Catalog gives complete details on three types of Micro Switch heavy duty limit switches, including specifications and advantages. Micro Switch, Freeport, Ill.

1-10 ANTI STATIC FINISHES. Booklet lists manufacturers of durable and temporary anti static finishes for acrilan, including trade names and type of finish. Chemstrand Corporation, Decatur, Alabama.

1-11 SPRAYING SYSTEMS. Catalog gives types and capacities of industrial spray nozzles and related equipment, including pictures and characteristics. Spraying Systems Co., 3201 Randolph St., Bellwood, Illinois.

1-12 INDUSTRIAL TRUCKS. Brochure describes gasoline and battery powered trucks, electric platform trucks, electric crane trucks, "Traveloaders" and special attachments. Baker-Raulang Co., Cleveland 2, Ohio.

1-13 TENSILE TESTER. Bulletin describes new Constant-Rate-of-Extension Tensile Enlongation Tester for stress-strain evaluation of all materials in the range 0-.05 lbs. to 0-1,000 lbs. or 0-25 to 0-500 Kgs. tensile. Scott Testers, Inc., 101 Blackstone St., Providence 1, R. I.

1-14 HOT WATER HEATER. Brochure gives details on instantaneous steam injection hot water heater, including diagrams, types of installations and capacity table. Pick Mfg. Co., West Bend, Wisconsin.

1-15 ADJUSTABLE SPEED A-C DRIVES. Booklet describes Rectiflow a-c adjustable speed drive which can be used with good result on spinning frames. Westinghouse Electric Corp., Motor Dept., Buffalo 5, N. Y.

1-16 STORY OF TYCORA. Brochure entitled "This is the Story of Tycora . . . First Family of Modified Yarns" is now available. Textured Yarn Co., Inc., Philadelphia, Pa.

1-17 SOLVE PIPING PROBLEMS. Bulletin shows how unique "three dimensional" movement of ball joints can be advantageously used to solve piping flexibility problems. Complete diagrams and application pictures. Barco Manufacturing Co., 500-530 No. Hough St., Barrington, Ill.

1-18 "WEB PROCESS ENGINEERING." Catalog describes Waldron service in connection with coating, saturating, laminating, printing or embossing on glass fibre, nylon, rayon, cloth, etc. John Waldron Corp., P. O. Box 791, New Brunswick, N. J.

1-19 HEAT TRANSFER. Bulletin contains product information and selection data for storage water heaters and heat exchangers. Patterson-Kelly Co., Inc., East Stroudsburg, Pa.

1-20 OILLESS AND SELF-LUBRICATING BEARINGS. Catalog is a very useful reference guide for sintered metal parts, and includes tables illustrating the standard sizes of bearings available. Wakefield Bearing Corp., 29-99 Foundry St., Wakefield, Mass.

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R-1 Lummus Pepper-Shaker Opener —Gives complete details and photographs Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

R-2 Static Elimination — How to eliminate static safely and inexpensively. Simco Co., 920 Walnut St., Lansdale, Pa.

R-3 Card Grinding Information — Care and operation of cards. B. S. Roy & Son Co., Worcester, Mass.

R-4 Card Clothing — Describes Strip-O-Matic Card Clothing. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia, Pa.

R-5 Versa-Matic Drawing Frame — Describes drafting elements, quality of sliver, roving and yarn possible. Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

R-6 Sargent Opener—Describes opener with rotary evener and stripper. C. G. Sargent's Sons Corp., Graniteville, Mass.

R-7 Ball Bearing Comb Boxes — Describes working principle, shows cut-away Views, Southern States Equipment Corp., Hampton, Georgia.

R-8 Feathertouch Drafting — Describes "highest production per frame at lowest cost." Ideal Industries, Inc., Bessemer City, N. C.

R-9 Automatic Weighing Feeders — Tandem Weighing Feeder produces webs, mats and felts of continuing accuracy. W. D. Dodenhoff Co., Inc., Box 178, Greenville, S. C.

R-11 Flexidyne Individual Card Drive—Describes operating principles, includes prices. Dodge Mfg. Co., Mishawaka, Indiana.

R-12 Bobbins — Catalog describes metal, wood and plastic bobbins. Illustrations show actual use. Lestershire Spool Div., National Vulcanized Fiber Co., Johnson City, N. Y.

R-14 Pneumastop For Fly Frames—Brochure shows type of installation and method of operation. Pneumafil Corp., Charlotte 8, N. C.

R-15 Advantages of Aldrich Pickers —Good technical text, comprehensive pictures. Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

R-16 Universal Card Coiler—Gives 12 reasons why it's "the best," includes dimensions. McDonough Power Equipment, Inc., McDonough, Ga.

R-17 New Condenser Tape — Describes Supr-O-Tape an impregnated fabric condenser tape. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

R-18 Coilers and Conversions — Describes new complete coilers and conversions for cards. Southern States Equipment Corp., Hampton, Ga.

R-19 84" Woolen Card — Includes picture, floor plan, description, and technical details. Davis & Furber Machine Co., North Andover, Mass.

R-20 SRRL Opener—Cleaner—Information on new SRRL development for opening and cleaning cotton being manufactured for sale to mills by Davidson-Kennedy Co., 1090 Jefferson St., N. W., Atlanta, Ga.

SPINNING—TWISTING—WINDING—SPOOLING—WARPING—THROWING

R-101 Spinning News — Up-to-the minute news on spinning equipment. Roberts Co., Sanford, N. C.

R-103 Products For Spinning and Weaving—Complete line, applications, advantages shown. Dayton Rubber Co., Textile Div., Dayton, Ohio.

R-104 New Bobbin Manual — Only complete, authoritative bobbin guide in the industry. Write direct to Dept. DD, Lestershire Spool Division, National Vulcanized Fibre Co., Wilmington 99, Delaware.

R-105 Spindle Oil — "Gulfspin" insures against excessive wear and eliminates spindle wobble. Gulf Oil Corp., Gulf Bldg., Pittsburgh, Pa.

R-106 ANTI-STATIC AGENT. Data sheet lists basic characteristics of liquid anti-static agent which eliminates processing difficulties with fibers due to static electricity. E. F. Houghton, 303 West Lehigh Ave., Philadelphia 33, Pa.

R-108 High Speed Automatic Quiller —Lists advantages and dimensions of "Autocopser." Terrell Machine Co., Inc., P. O. Box 928, Charlotte, N. C.

R-110 Stop Frame On Roving Failure—Adamstop instantly detects roving failures, stops frame. Adams, Inc., 209 East Stone Ave., Greenville, S. C.

R-111 Automatic Cop Winder—Tells how high production with less labor is possible. F. A. Lazenby Co. 3106 Elm Ave., Baltimore 11, Md.

R-112 Bahnson Packaged Modernization—Details on Collecto-Vac, Open-Aire Creels, Cross-Jet Cleaner, Air Conditioning. Bahnson Company, Winston-Salem, N. C.

R-113 Sectional Warper — Describes full width and sectional warpers for knitting, weaving. Robert Reiner, Inc., Weehawken, New Jersey.

R-114 Conical Rings and Flyers — Complete details and specifications. Herr Manufacturing Co., Inc., 318 Franklin St., Buffalo 2, New York.

R-115 Precise Winding Machine — For winding pineapple or straight cones and tubes of synthetics. Foster Machine Co., Westfield, Mass.

R-116 Automatic Cleaning Equipment—Working details and advantages of the Tri-Rail Cleaner. American Monorail Co., 13107 Athens Ave., Cleveland 7, Ohio.

R-117 Aluminum Section Beams — Lists advantages, includes prices and delivery schedules. Hayes Industries, Inc., Jackson, Mich.

R-118 Lubricants For Textiles — Samples of Ben Boy Bearing, Spindle, Twister Lubricants and Non-Melting Oils. Georgia-Carolina Oil Co., Box 101, Macon, Ga.

R-119 Custom Made Thread Guides—Includes composition, properties, specifications of all designs. American Lava Corporation Chattanooga 5, Tenn.

R-120 Spinning Frame Conversions—Big-package, new-frame results at half the cost. Meadows Mfg. Co., Station A., Atlanta, Ga.

R-121 Collecto-Vac — New development collects lint, fly and broken ends. The Bahnson Company, Winston-Salem, N. C.

R-122 Static Eliminator For Warpers-Slashers-Creels—Increased production, improved quality, reduced waste. The Portland Co., 22 Fore St., Portland, Maine.

R-123 Spinning and Twister Rings — Complete details, pictures, price lists. Whitinsville Spinning Ring Co., Whitinsville, Mass.

R-125 Lint-Free Creel—Complete details and pictures of the new Airfoil Design. Pneumafil Corporation, Charlotte 8, N. C.

R-126 Gear Bulletins — Cover products and gears for the complete textile mill. Precision Gear & Machine Co., 2001 N. Tryon St., Charlotte 2, N. C.

R-128 Suction Cleaning System—Details on new Collector Unit Model C-4. Pneumafil Corp., Charlotte 8, N. C.

R-129 Facts About Your Flyers and Spindles—Advantages of smooth flyer and spindle operation. Ideal Machine Shops Bessemer City, N. C.

R-131 Ring Frame Job Control — Booklet describes Adamsignal, which senses any change in traveler action to signal operator and records thread breaks. Adams, Inc., 209 E. Stone Avenue, Greenville, S. C.

R-132 Traveling Cleaners—Describes improved frame and room cleaners. Parks-Cramer Co., Fitchburg, Mass.

(Continued Next Page)

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R-133 Lapless Endless Spinner—Full information available. Ton Tex Corporation, 31 Columbus Ave., Englewood, N. J.

R-135 Worsted Spinning — Describes five stages from top to yarn. Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

R-137 Antistatic Lubricant—Technical bulletin discusses antistatic lubricant for processing synthetic filament yarns. Textile Chemicals Division, Nopco Chemical Co., 60 Park Place, Newark, N. J.

R-139 Spindle Oiling Machine—Features and advantages noted. Wicaco Machine Corp., 4800 Stenton Ave., Wayne Junction, Philadelphia 44, Pa.

R-141 Handy Spinning Reference — Shows traveler speeds, sizes of ring flanges. Victor Ring Traveler Co., Providence, R. I. and Gastonia, N. C.

R-142 Unirail Uptwister — Higher yarn quality and better packages at faster speeds. Universal Winding Co., P. O. Box 1605, Providence, R. I.

R-144 Precision Textile Winding — Tensions and Density Control for winding rubber cones. Kidde Mfg. Co., 35 Farrand St., Bloomfield, N. J.

R-145 Roller Bearing Spindles — Pictured in cut-away views, advantages described. The Marquette Metal Products Co., 1145 Glenwood Ave., Cleveland, Ohio.

R-146 Cone Winder—Describes Model 102 winder, including applications. Foster Machine Co., Westfield, Mass.

R-147 Short Cut To Staple Fiber Spinning—Ten steps in operation of the Tow Stapler. Turbo Machine Co., Lansdale, Pa.

R-148 Weaver's Knotter — Instructions as to use, description. A. B. Carter, Inc., Gastonia, N. C.

R-149 Textile Roll Coverings — Describes complete line as well as other mill supplies. Armstrong Cork Co., Industrial Div., Lancaster, Pa.

R-150 Lint-Free Motor — Describes motor for constant speed a-c driven pickers, roving frames, spinning and twisting frames, etc. Westinghouse Electric Corp., P. O. Box 2278, Pittsburgh 30, Pa.

R-151 Tape For Driving Spindles — Describes banding for spindle drives on twisting, roving and spinning. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

R-152 Giant Aluminum Cotton Beams —Describes 38 x 54" section beams for cotton. Hayes Industries, Inc., Jackson, Mich.

R-153 Woolen Spinning Frame — Colored picture, complete details Davis & Furber Machine Co., North Andover, Mass.

R-154 Large Package Twister—Information on new anti-friction Jumbo Twister which carries a 14" bobbin with a 12" build. Meadows Mfg. Co., P. O. Box 4354, Atlanta, Ga.

R-155 Wide Setover Pin Drafter — Booklet describes advantages, technical aspects, adaptments of wide setover Pin Drafter. Warner & Swasey Co., 5701 Carnegie Ave., Cleveland 3, Ohio.

SLASHING—WEAVING—CLOTH ROOM—TUFTING

R-201 Looms — Describes "World's Largest Line of Looms." Crompton & Knowles Loom Works, Worcester 1 Mass.

R-202 Counting And Measuring Devices—Wide range of counting devices for all types of textile machinery Veeder-Root, Inc., Hartford, Conn.

R-203 Loom Supplies — Describes complete line. E. H. Jacobs Northern Division, The Bullard Clark Co., Danielson, Conn.

R-204 Innovation In Textile Drying—Details on Steam or Gas "Hot Air" Slasher. J. O. Ross Engineering Corp., 444 Madison Ave., New York 22, New York.

R-206 Loom Production Charts — Celluloid card shows yards per loom per week. Ralph E. Loper Co., Greenville, S. C.

R-207 Aluminum Beams—Describes lightweight beams for textiles, Hayes Industries, Inc., Jackson, Mich.

R-208 The Story Of Starches — History and information on manufacture and use of starches. National Starch Products, Inc., 750 Third Ave., New York 17, N. Y.

R-209 Loading System — Pneumatic loading system for Saco-Lowell slasher. The Foxboro Company, Foxboro, Mass.

R-211 Steel Warp Beams—Beams for both broadloom and narrow fabrics. Milton Machine Works, Inc., Milton, Pa.

R-212 Penford Gums In Textiles — Describes excellent properties for warp sizing spun yarns. Penick & Ford Ltd., Inc., 420 Lexington Ave., New York 17, New York.

R-213 Saco-Lowell Positrol Slasher—Includes advantages, photographs, cutaway drawings. Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

R-214 Rotary Unions—Cut costs, get better sealing on can dryers. Perfecting Service Company, 332 Atando Ave., Charlotte, N. C.

R-216 Air Slasher Dryer — Shows construction and operating details. Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

R-217 Butt-Tacking Sewing Machine —Describes operation, installation of single thread butt-tacking sewing machine. The Merrow Machine Co., 28 Laurel St., Hartford, Conn.

R-218 Loom Reed Booklet — Describes in detail a variety of reeds. Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.

R-219 Cocker Equipment—Information on warp sizer, beam warper, creels. tensions, back-winders, etc. Cocker Machine & Foundry Co., Gastonia, N. C.

R-220 Chemical Data Sheets—Available on a full range of chemicals. Nopco Chemical Co., Harrison, N. J.

R-223 Tufting Machines — Describes automatic pattern attachment. Cobble Bros. Machinery Co., Inc., River Road, Chattanooga, Tenn.

R-226 Prevent Fabric Distortion — How to eliminate distortion and where to check for it. Mount Hope Machinery Co., 15 Fifth St., Taunton, Mass.

R-227 Formulas For Slashing Arnel —Includes also information on warping, weaving and quilling. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte 1, N. C.

R-228 The Random Web Process — Describes the Rando-Webber and Rando-Feeder. Bulletin 105. Curlator Corp., Textile Div., 501 W. Commercial St., Rochester, N. Y.

R-230 ECLIPSE STARCHES FOR TEXTILES. Data sheet describes use of thin-boiling starches in the textile industry, with particular emphasis on warp sizing. Physical and chemical data included. A. E. Staley Mfg. Co., Decatur, Ill.

R-232 Hydraulic Slasher Drives — Bulletin 5571 describes economical approach to improved slasher operation. Vickers, Inc., 1036 Peachtree St., Atlanta, Ga.

R-233 Textile Accessories — Gives specifications of Gates textile accessories in handy pocket booklet. The Gates Rubber Co., 1001 Broadway, Denver 17, Colorado.

R-234 Cocker Slashers — Complete specifications and advantages, including allied equipment. Cocker Machine & Foundry Co., Gastonia, N. C.

R-235 Mounts For Looms — Vinyl mount eliminates need for bolts or paste. Clark, Cutler, McDermott Co., 106 W. Central St., Franklin, Mass.

R-236 Unifil Loom Winder — Describes new concept of filling preparation which needs no quilling area. Universal Winding Co., P. O. Box 1605, Providence, R. I.

R-237 High Speed Warp Sizer—Gives outstanding features and specifications. Cocker Machine & Foundry Co., Gastonia, N. C.

R-238 Traveling Loom Cleaner—Advantages of the new Oscillaire loom cleaner. Parks-Cramer Co., Fitchburg, Mass.

(Continued Next Page)

HELPFUL BOOKLETS FREE!

R-239 Draper Repair Parts Catalog —Contains illustrations covering all mechanisms and construction with complete listings. Draper Corporation, Hopedale, Mass.

R-240 Baling Presses — Describes complete line of motor-driven and hydraulic baling presses. Logemann Brothers Co., 3150 West Burleigh St., Milwaukee, Wis.

R-241 Textile Machinery Parts Catalog — Describes complete line of Dayco and Thorobred textile parts. Dayton Rubber Co., Dayton, Ohio.

R-242 Instruments For Accuracy. — Systems for sizing and slashing. Bulletin 98229, Taylor Instrument Co., Rochester, N. Y.

R-243 Counting Devices — Describes complete line of of counters for every application. Trumeter Company, 38 W. 32nd St., New York 1, New York.

R-244 Squirrel-Cage Loom Motor — Describes totally enclosed, non-ventilated, constant-speed motors. Westinghouse Electric Co., P. O. Box 2278, Pittsburgh 30, Pa.

R-245 Static Bars — Humorously illustrates how static can be overcome. The Simco Co., 920 Walnut St., Lansdale, Pa.

R-246 Care Of Draper Shuttles — Describes how longer, troublefree service may be obtained. Draper Corporation, Hopedale, Mass.

R-247 Clutch Brake Motor For Draper Looms — Describes compact power package for driving Draper looms. Westinghouse Electric Corp., P. O. Box 2278, Pittsburgh 30, Pa.

R-250 Bulk Handling of Starch—Bulletin surveys advantages and disadvantages of a bulk system for starch. It describes the types of equipment available for each component and gives estimates of costs. A. E. Staley Mfg. Co., Box 151, Decatur, Ill.

R-251 Small Pilot Slasher — Information on new all-electric Callaway Slasher. Ideal for mills which must prepare a lot of samples. West Point Foundry & Machine Co., West Point, Georgia.

R-252 Weaving Machines — Textile job report No. 20 on Warner & Swasey Sulzer weaving machines at Yale Woolen Mills. Warner & Swasey, 5701 Carnegie Ave., Cleveland 3, Ohio.

R-253 One-Piece Sizing Agent — Houghto-Size CW provides low kettle cost, results in free-running warp of high breaking strength, increasing weaving efficiency. E. F. Houghton & Co., 303 West Lehigh Ave., Philadelphia 33, Pa.

R-254 Lubricant for Synthetics — Booklet illustrates Fibregard, a colloidal lubricant that adheres uniformly and continuously to the surfaces of man-made fibers. Harry Miller Corp., 4th and Bristol Sts., Philadelphia 40, Pa.

KNITTING

R-301 Singlehead Full-Fashioned Machine — Literature on request from the Wildman Jacquard Mfg. Co., Full Fashioned Div., Norristown, Pa.

R-302 Forged Head Aluminum Beams — Gives specifications on new high yardage beams. Milton Machine Works, Inc., Milton, Pa.

R-303 Raschel Knitter — Describes new Raschel-type knitting machine. Kidde Manufacturing Co., Inc., 35 Farrand St., Bloomfield, N. J.

R-304 Vibralon For Hosiery—Greater snag resistance, dullness, warmth and absorbency. W. F. Fancourt Co., 519 S. Delaware Ave., Philadelphia 47, Pa.

R-306 Booklets On Fidelity Machines — Details on "400", Multi-Design Ribber, Skein Reelers. Fidelity Machine Co., 3908-18 Frankford Ave., Philadelphia 24, Pa.

R-307 Needle Oil Does Not Stain — Details on "Gulftex 39" developed for knitting mills. Gulf Oil Corp., P. O. Box 1106, Pittsburgh 30, Pa.

DYEING—BLEACHING—FINISHING—PRINTING

R-401 Solvent Detergents — Capabilities and advantages noted. Oakite Products, Inc., 126C Rector St., New York, N. Y.

R-402 Tubes For Package Dyeing — Describes Dytex tubes for one-time use. Sonoco Products Co., Hartsville, S. C.

R-403 Finishing Machinery — Text and photographs of complete line of machinery. Marshall and Williams Corp., 46 Baker St., Providence, R. I.

R-404 Water Analysis — Includes tables, conversion factors, indicators, standard solutions. Solvay Process Div., Allied Chemical & Dye Corp., 61 Broadway, New York 6, N. Y.

R-406 Urea, Formaldehyde.—Literature on urea, formaldehyde or U.F. concentrate-85. Dept. CUFI-29-1, Nitrogen Div., Allied Chemical and Dye Corp., 40 Reetor St., New York 6, New York.

R-407 Acid Mordant Blue B—Details on Acid Alizarine Blue B for bright navy shades. Zinsser & Co., Inc., Hastings on Hudson 6, New York.

R-408 Hydrogen Peroxide — Covers properties, uses and handling. Solvay Process Div., Allied Chemical & Dye Corp., 61 Broadway, New York 6, N. Y.

R-412 Cationic Surface Active Agent — Describes Uversoft "D." Harshaw Chemical Co., 1945 East 97th St., Cleveland 6, Ohio.

R-413 Chemicals, Dyes And Intermediates — Complete file of bulletins available. Metro-Atlantic, Inc., Centredale, R. I.

R-414 Wetting Agent — Describes highly concentrated detergent and wetting agent. Rohm & Haas Co., Washington Square, Philadelphia, Pa.

R-415 Peroxide Bleaching System — Illustrates and describes this continuous system. E. I. du Pont de Nemours & Co., Electrochemical Dept. T.I-2, Wilmington, Del.

R-416 Surface Tension Depressant — Tells how product can be used for wetting, dye leveling or as a penetrant. Hart Products Corp., 1440 Broadway, New York, N. Y.

R-417 Textile Chemicals — Describes leading products for wet processers. Royce Chemical Co., Carlton Hill, N. J.

R-418 Industrial Water Treatment — Discusses fundamentals of industrial water treatment. Rohm & Haas Co., Resinous Products Div., Washington Square, Philadelphia 5, Pa.

R-419 Theoretical and Applied Silk Soaking — Outlines methods and gives suggestions. Hart Products Corp., 1440 Broadway, New York 18, New York.

R-420 Brine For Textile Industry — Describes Lixate Process for making brine. International Salt Co., Inc., Scranton, Pa.

R-421 Depuma — Describes odorless, viscous, non-evaporating emulsion for anti-foam. Koppers Co., Inc., Chemicals & Dyestuffs Div., 2010 Clarke Bldg., Pittsburgh 19, Pa.

R-422 Catalyst AC-6 — Tells how curing efficiency may be stepped up as much as 25%. Monsanto Chemical Co., Plastic Division, Dept. T1-3, Springfield 2, Ohio.

R-423 Soda Ash Bulletin — Contains useful data covering this subject. Solvay Sales Division Allied Chemical & Dye Corp., 40 Rector St., New York 6, New York.

R-424 Water Repellent Finish — Describes Aquarol water repellent finish. Arkansas Co., Inc., Newark, N. J.

R-426 Industrial Oil — Catalogs on Industrial Oil and Fatty Acid products. Swift & Company, Industrial Oil Dept., 1800 165th St., Hammond, Indiana.

R-428 Chemical Catalog — Lists products with chemical composition, properties and applications. Antara Chemicals Div., General Aniline & Film Corp., 435 Hudson St., New York 14, New York.

R-429 Chemical Bulletins — Issued each month as a help to wet processers. WICA Chemicals, Inc., P. O. Box 506, Charlotte, N. C.

R-430 Hydraulic Power Units — Describes unit for operating hydraulic textile machines. B. F. Perkins & Son, Inc., Holyoke, Mass.

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HELPFUL BOOKLETS FREE!

R-431 Proctor Drying Machinery — Describes all types of dryers, includes information on preboarding. Proctor & Schwartz., Inc., 7th and Tabor Rd., Philadelphia, Pa.

R-433 Safe Handling Of Hydrogen Peroxide — Lists safety rules to be followed in handling the product. Solvay Process Division, Allied Chemical & Dye Corp., 61 Broadway, New York 6, N. Y.

R-434 Base Detergent Acids—Bulletin tells how new TENN-ACIDS offer simple and practical method for mills to prepare concentrated, low cloud point detergents based on alkyl aryl sulfonates. Tennessee Corp., Marketing Research & Development Dept., 1330 W. Peachtree St., Atlanta 9, Ga.

R-435 Cut Water Treatment Costs — Describes the control of scale, slime, algae and corrosion. Oakite Products, Inc., 126C Rector St., New York 6, New York.

R-436 Rapidase For De-Sizing — The properties and characteristics of Rapidase in detail. Wallerstein Co., Inc., 180 Madison Avenue, New York 16, N. Y.

R-437 Caustic Soda—Book describes the uses, manufacturing processes, unloading and dissolving diagrams, materials of construction, analytical processes, etc. Wyandotte Chemicals Corporation, Michigan Alkali Division, Wyandotte, Michigan.

R-438 Surface-Active Agent — Properties, applications, of Nonionic Actylphenoxyethanol Triton. Rohm & Haas Co., Special Products Dept., Washington Square, Philadelphia, Pa.

R-440 Guiders And Tension Devices — Straight line guiding of open width goods. Mount Hope Machinery Co., 15 Fifth St., Taunton, Mass.

R-441 Processing Arnel Fabrics and Blends — Formulas for dyeing, printing, finishing and heat treating. Celanese Corp. of America, Textile Div., Marketing Dept., Box 1414, Charlotte, N. C.

R-442 Hycar Latices — Physical properties and typical fields of application. B. F. Goodrich Chemical Co.,

R-443 Sodium Hydrosulfite — Literature and test samples are available on "T-C Hydro." Tennessee Corp., 617-629 Grant Bldg., Atlanta, Ga.

R-444 Package Dyeing—Publication gives useful information on the application of vat dyes in package dyeing. American Cyanimid Co., Bound Brook, New Jersey.

R-445 New Finishing Rolls — Money-saving facts about long-wearing, quality rolls. The Dayton Rubber Co., Holfast Div., 1486 Lakewood Ave., Atlanta, Ga.

R-446 Ethanolamines — Lists application, chemical and physical properties. Nitrogen Division, Allied Chemical and Dye Corp., 40 Rector St., New York 6, New York.

R-447 Nappers For Treating Any Fabrics — Complete details on Muller Tri-Napping Machine. Franz Muller, Monchen-Gladbach, Germany.

R-448 Ball Bearing Turn Table — Describes 48-inch steel turn table for mills. Birch Brothers, Inc., 32 Kent St., Somerville, Mass.

R-449 Rotary Dyeing Machine—For use in dyeing hosiery, hats, gloves, socks, etc. Turbo Machine Co., Lansdale, Pa.

R-452 Micro Switch For Wet Process — Advantages and applications in dyeing, bleaching, finishing. Micro Switch Div., Minneapolis-Honeywell Regulator Co., Freeport, Ill.

R-453 Complete Line Of Mathieson Chemicals — Covers organic, inorganic, specialty chemicals. Olin Mathieson Chemical Co., Industrial Chemicals Div., Baltimore 3, Md.

R-455 Aligning Lays—Setting instructions for step-by-step aligning. Draper Corporation, Hopedale, Mass.

R-456 Dyeing and Finishing Machinery — Complete line presented in series of catalogs. Birch Brothers, Inc., 32 Kent St., Somerville 43, Mass.

R-457 Dyeing, Bleaching and Drying Equipment — Complete line for cotton, wool and synthetics described. Color pictures. Morton Machine Works, 1718 3rd Ave., Columbus, Ga.

R-458 Napthol Ratios Slide Chart — Quickly and accurately enables operators to determine Napthol Ratios. Alliance Color & Chemical Co., 33 Ave. P, Newark 5, New Jersey.

R-459 "PCB" Rock Salt — Tells how product saves money, eliminates bad dyeing. Morton Salt Co., Industrial Division, 120 So. LaSalle St., Chicago 3, Ill.

R-461 Wool Oils—Describes influence of wool oils in producing suality yarns and fabrics. Proctor & Gamble Dist. Co., Gwynne Bldg., Cincinnati, Ohio

R-462 Bleaching With Peroxygen Chemicals — Bleaching methods comprehensively treated. Becco Chemical Div., Food Machinery & Chemical Corp., Station B, Buffalo 7, New York.

R-464 Automatic Control System For Continuous Bleaching — How to control temperature, pressure and liquid level. Taylor Instrument Companies, Rochester 1, New York.

R-466 Penford Finishing Gums — Complete data, including physical properties. Penick & Ford Ltd., Inc., 420 Lexington Ave., New York 17, New York.

R-467 Regeneration Of Zeolite Water Softeners — Explains advantages of Lixate Process. International Salt Co., Scranton, Pennsylvania.

R-468 Dyeing Synthetic Fibers—Detailed analysis of methods and materials. General Dyestuff Co., 435 Hudson St., New York 14, New York.

R-469 Single Apron Stock Dryers — Presents latest idea in automatic drying. C. G. Sargent's Sons Corp., Graniteville, Mass.

R-470 Eliminate Dye-Bath Shock — How to protect fabrics from crow's-feet, uneven shades. Foxboro Company, 487 Neponset Ave., Foxboro, Mass.

R-474 Industrial Brushes — Features use on shears, printing machines. M. W. Jenkins' Sons, Inc., 444 Pompton Ave., Cedar Grove, N. J.

R-475 Waste Heat Recovery — Describes system of waste heat recovery from polluted water. Ludell Mfg. Company, 5200 West State Street, Milwaukee, Wis.

R-476 Washers For Scouring, Bleaching, Acidifying — Describes high-capacity, continuous process washers. C. G. Sargent's Sons Corp., Graniteville, Mass.

R-478 Wool Cleaning Unit—Describes unit for cleaning carpet wools mechanically before scouring. Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

R-479 Naphthol for Lightfast Browns—Booklet describes new, straight, nonsubstantive naphthol, Naphthol AS-BN, for the continuous naphtholation of cotton and rayon piece goods in the dyeing of economical, fast-to-light browns. General Dyestuff Co., 435 Hudson St., New York 14, New York.

R-480 Softener, Lubricant, Napping Aid—Technical information available on softener, lubricant and napping aid for natural and synthetic fibers, yarns and fabrics. Nopco Chemical Co., Harrison, N. J.

R-481 Handbook on Methocel—Gives technical information and use data on family of methylcellulose ethers called Methocel. Organic Chemicals Sales, The Dow Chemical Co., Midland, Mich.

FIBERS AND YARNS

R-502 Fortisan-36, New Textile Fiber—Includes charts, diagrams, text, presents technical properties. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte, N. C.

R-503 Caprolan Nylon Heavy Yarns—Describes strength, long flex life and ready dyeability. Fiber Sales Dept., National Aniline Div., 261 Madison Ave., New York 16, N. Y.

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HELPFUL BOOKLETS FREE!

R-506 Rayon—Mile By Mile—Details on how rayon is produced mile by mile, perfect inch by inch. Industrial Rayon Corp., 500 Fifth Avenue, New York 18, N. Y.

R-507 The Chemstrand Nylon Story—Describes the birth and growth of Chemstrand nylon. Chemstrand Corp., 350 Fifth Ave., New York 1, N. Y.

R-508 Color-Fast Fibers — Further information on "Coloray," Courtauld's solution dyed rayon staple which is a contribution to colorfastness in fabrics. Courtaulds (Alabama) Inc., 600 Fifth Ave., New York 20, N. Y.

RESEARCH—TESTING—LABORATORY

R-601 Testing Instruments—Descriptions of 37 instruments for testing textiles. Custom Scientific Instruments, Inc., 541 Devon St., Kearney, N. J.

R-602 Metal Detector — Spot troublemakers before they harm equipment or fabrics. Radio Corp. of America., Dept. S-271, Building 15-1, Camden, N. J.

R-603 Shadograph Weighing Devices —Pictures and information on various types of scales. Exact Weight Scales Co., Columbus 8, Ohio.

R-604 Evenness Tester—Details on taking the guess out of quality control. Uster Corp., 2516 Wilkinson Blvd., Charlotte, N. C.

R-605 Yarn Count Scale—Booklet describes fast, accurate method of determining yarn count number with direct reading Shadograph yarn count scale. Exact Weight Scale Co., Columbus, Ohio.

R-606 Strobotac — Measures speed of rotating, reciprocating or other cyclic motions. General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.

R-607 Yarn Count Scale—Data sheet tells how direct-reading instrument provides fast, accurate method of determining yarn count number. Exact Weight Scale Co., Columbus, Ohio.

MANAGEMENT, PROCESS ENGINEERING CONSULTANTS, FACTORS

R-701 Factoring Service—Details on advantages of factoring, including information on general banking and pension plans. Trust Company of Georgia, Atlanta, Ga.

R-702 Beechcrafts At Work — Tells how Beechcraft executive airplanes can save time and money. Southern Airways Co., Atlanta Airport, Atlanta, Ga.

R-705 The Wonalancet Way — Deals with current problems in Textiles. Wonalancet Company, 128 Burke St., Nashua, N. H.

R-706 A Fair Day's Pay And In Return A Fair Day's Work — Outlines proper utilization of labor, material and equipment. American Associated Consultants, Inc., 250 Park Ave., New York, N. Y.

R-707 Non-Woven Fabrics— Booklet gives outline of nature and history of non-wovens and the manufacturing techniques of today. Booklet 56-219A, Chemical Div., Goodyear Tire & Rubber Co., Akron 16, Ohio.

GENERAL PLANT OPERATION

R-801 Textile Brushes — Describes complete line of brushes for all departments of mill. S. A. Felton & Son Co., Manchester, N. H.

R-802 Belt Lacing Equipment — Includes prices, specifications, etc. Clipper Belt Lacer Co., Grand Rapids, Michigan.

R-804 "Motor Selector." — How to select a-c motors for specific application. Bulletin B-2103. Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio.

R-805 Everything For Floor Care — Describes scrubbing, waxing, polishing and mopping equipment as well as waxes, sealers, and cleansers. Finnell System, Inc., Dept. TI, 1300 East St., Elkhart, Ind.

R-806 Rotary Pressure Joints—Details on self-lubricating, self-adjusting, self-aligning joints. The Johnson Corp., Three Rivers, Mich.

R-807 Servicing "One-Shot" Lubricators—Describes high capacity spring discharge piston pump lubricator. Bijur Lubricating Corp., 151 W. Passaic St., Rochelle Park, N. J.

R-809 Wrap Up Lint Problems—Automatic lint filters remove lint from air, winds it into desposable roll. Bulletin 234, American Air Filter Co., 275 Central Ave., Louisville 8, Ky.

R-810 Stop Corrosion — Details on "Speed-Rex" paint for metal, wood and concrete. Truscon Laboratories, Box 69, Milwaukee Junction, P. O. Dept. T, Detroit 11, Mich.

R-812 Mechanical Power Transmission — Includes drawings, dimension, weights, prices, application. Dodge Mfg. Corp., Mishawaka, Indiana.

R-813 Metal Cleaner and Preserver —Describes Immunol, a neutral, nontoxic, non-flammable, odorless solvent that cleans, degreases and rustproofs metal. Harry Miller Corp., 4th and Bristol Sts., Philadelphia 40, Pa.

R-815 Magnetic Ideas—Booklet gives product and application data on magnetic separation, automation and vibration equipment for textiles. Eriez Manufacturing Co., Erie, Pa.

R-816 Leather Belting — Selection, installation, proper maintenance. Atlanta Belting Co., 508-510 Whitehall St., S. W., Atlanta, Ga.

R-817 One-Shot Lubricators—Details on pull-type semi-automatic lubricators. Bijur Lubricating Corp., 151 W. Passaic St., Rochelle Park, N. J.

R-818 Story of Nylon Bristle. — Tells of discovery and production, with special attention to "Tynex," a form of Nylon ideal for use in brushes. M. W. Jenkins' Sons, Inc., 444 Pompton Ave., Cedar Grove, N. J.

R-820 Floaxial Dial Scales — Explains mechanism and gives applications. Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.

R-822 Industrial Greases — Describes multi-purpose lithium soap industrial greases. Sinclair Refining Co., 600 Fifth Ave., New York, New York.

R-823 Roller Bearings For Textiles —How roller bearings are employed for more profitable textile production. Hyatt Bearings Div., General Motors Corp., Harrison, N. J.

R-824 Cylinders And Boosters — Complete listing of "in stock" equipment including proce and description. Miller Fluid Power Co., 2040 N. Hawthorne, Melrose Park, Ill.

R-826 SOAP-DETERGENT BUYING —Soap-Detergent Buying Guide lists more than 40 products for use in textile mills. Associated Products Dept., Colgate-Palmolive Co., 300 Park Ave., New York 22, N. Y.

R-828 Blower And Exhausters — Full description, including detailed drawings. Buffalo Forge Co., 490 Broadway, Buffalo 5, N. Y.

R-829 Paint Stripping Booklet — Explains simplified method of stripping paint. Oakite Products, Inc., 22 Thames St., New York 6, New York.

R-830 Air Filtration — Illustrates Auto-Airmat, a dry-type air filter. American Air Filter Co., Inc., 275 Central Ave., Louisville 8, Ky.

R-832 Drinking Fountains & Coolers —Description of all models, dimensions, illustrations. Halsey W. Taylor Co., Warren, Ohio.

R-833 Textile Leathers Catalog — Characteristics and advantages of "Tannate" leathers. J. E. Rhoads & Sons, 2100 W. Eleventh St., Wilmington, Del.

R-834 Catalog Of Needle Bearings — Design, application for five types of needle bearings. The Torrington Co., Torrington, Conn.

R-836 Metered Lubrication — Points up advantages of central lubrication systems. Bijur Lubricating Corp., Rochelle Park, N. J.

R-837 Service Procedure For Ball Bearings—Helpful manual shows how to increase life of ball bearings. New Departure Div., General Motors Corp., Bristol, Conn.

R-839 Lubrication Of Electric Motors —How to lubricate and clean ball and roller bearings. New York & New Jersey Lubricant Co., 292 Madison Ave., New York 17, New York.

R-840 Ball Bearings For Textile Machinery — Bearings for all phases of textile processing. The Fafnir Bearing Co., New Britain, Conn.

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HELPFUL BOOKLETS FREE!

R-841 Lubrication Of Bearings — Helpful list of do's and don'ts to prolong bearing life. New York & New Jersey Lubricant Co., 292 Madison Ave., New York 17, New York.

R-842 Textile Mill Cleaning Guide — Methods and means of proper cleaning and maintenance. Oakite Products, 52 Rector St., New York 6, New York.

R-843 For Static Elimination — Eliminates static safely, simply and inexpensively. Simco Co., 980 Walnut St. Lansdale, Pa.

R-845 Cut Costs With Moyno Pumps — Describes "progressing cavity" pumps for mercerizing and sizing. Bulletin 30-TI, Robbins & Myers, Inc., Springfield, Ohio.

R-847 Lubricants For Textiles — Working samples of bearing lubricants, spindle oils, etc. Georgia-Carolina Oil Co., Box 101, Macon, Ga.

R-849 Detect, Extinguish Fires. — Describes portable and built-in extinguishers; smoke detecting and rate-of-rise fire detecting systems. Catalogue "P-40", Dept. "A", Walter Kidde & Co., Inc., Main St., Belleville 9, N. J.

R-850 New Lubricated Plug Valves—Semi-steel and steel lubricated plug line. The William Powell Co., 2525 Spring Grove Ave., Cincinnati 22, Ohio.

R-851 "Tank Talk"—Shows various types of elevated steel tanks. R. D. Cole Manufacturing Co., Newnan, Ga.

R-852 Cotton Mill Equipment — Traces pictorially the steps in processing raw cotton into finished cloth. Westinghouse Electric Corp., 511 Wood St., Pittsburgh 30, Pa.

R-853 Micro Switch Bulletin—Catalog of products includes prices, applications, etc. Micro Switch Div., Minneapolis-Honeywell Regulator Co. Freeport, Ill.

R-854 Roller Bearings For Textiles—How roller bearings can help production. Hyatt Bearings Div., General Motors Corp., Harrison, N. J.

R-855 Unit Heater — Data on the Herman Nelson horizontal and vertical units. American Air Filter Co., Inc., 215 Central Ave., Louisville, Ky.

R-856 Stainless Steel For Textiles—Applications and advantages of stainless textile equipment. Allegheny-Ludlum Steel Corp., Dept. TI-93, Oliver Bldg., Pittsburgh 22, Pa.

R-857 Finnell Combination Scrubber-Vac—Illustrated literature gives complete specifications and describes various methods of combination-machine-scrubbing, including method recommended for cleaning olly floors.—Finnell System, Inc., 1300 East St., Elkhart, Indiana.

R-861 "Vari-Pitch" Sheave Bulletin —Control by means of pitch diameter adjustment described. Allis-Chalmers Mfg. Co., Milwaukee 1, Wis.

R-862 Prevent Corrosion of Plain Steel — Describes special C-17 Pre-Krete, a hydraulic cement formula, designed to prevent corrosion or rust of plain steel vessels. Pocono Fabricators, Inc., Div. of Patterson-Kelley Co., Inc., East Stroudsburg, Pr.

R-863 Penetrating Wood Finish — Describes floor seals for textiles. E. I. Du Pont De Nemours & Co., Inc., Finishes Div., Wilmington, Del.

R-864 Certified Climate Air-Changer System — Describes use with direct humidification for partial or complete air conditioning, Parks-Cramer Co., Fitchburg, Mass.

R-868 Ridge Tool Prices—Capacities and weights included along with pictures. Ridge Tool Co., Elyria, Ohio.

R-869 Stainless Steel Fabrication — Information on ventilating and drying, slasher exhaust, and materials handling in stainless. Sims Metal Works, West Point, Ga.

R-872 Metal Conveyor Belts — Illustrates entire range of manufacture. Ashworth Bros., Inc., Metal Products Div., Fall River, Mass.

R-873 Rihco Humidifiers And Cooling Systems—Describes new atomizers to lessen air consumption in evaporative cooling systems. Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

R-874 Dynac Brake Motors—Electrical braking of a-c motors-roving, spinning, knitting. Westinghouse Electric Corp., Pittsburgh, Pa.

R-875 Textile Applications For "Scotch" Tape—Some good ideas on using "Scotch." Minnesota Mining & Mfg. Co., St. Paul 6, Minn.

R-877 Industrial Floor Finishes—16-page book contains specifications and descriptions of industrial floor finishes for textile use. Includes directions for application. Minnesota Paints, Inc., 1101 Third Street, South, Minneapolis, Minn.

R-878 HUMIDIFICATION BY GRADUVAC. Bulletin gives details on gravity type atomizer control system and tells how supply of water to atomizers is automatically regulated. Parks-Cramer Co., Fitchburg, Mass.

R-879 SWITCH IDEAS. "How Others Do It" is publication containing ideas submitted by plant engineers and electricians showing how they've used snap-action switches to increase production efficiency. Micro Switch, Div. of Minneapolis-Honeywell Regulator, Freeport, Ill.

MATERIALS HANDLING

R-901 Casters And Wheels—Casters and wheels for all applications. Darnell Corp., Ltd., 12000 Woodruff Ave., Downey, Calif.

R-902 Canvas Baskets — Complete line for textile use. W. T. Lane & Brothers, Poughkeepsie, N. Y.

R-903 Overhead Handling Equipment — Shows successful applications of monorail systems. American Monorail Co., 13106 Athens Ave., Cleveland 7, Ohio.

R-905 Conveyor Key Book—How to step-up production with modern conveying. Logan Co., 1115 Franklin St., Louisville, Ky.

R-906 How To Select A Lift Truck—Excellent means for price comparison between similar trucks. Hyster Co., 2902 N.E. Clackamas St., Portland 8, Oregon.

R-907 Corrugated Containers — Describes Multi-Unit and Bulk Container. Gaylord Container Corp., 111 N. 4th St., St. Louis 2, Mo.

R-909 Tramrail Engineering And Application — Data on how Tramrail Equipment can cut handling costs. Cleveland Tramrail Div., Cleveland Crane and Engineering Co., 1036 East 289th St., Wickliffe, Ohio.

R-910 How To Specify Packaging — Regulations on shipment, how to determine which package to use. Hinde & Dauch, Sandusky, Ohio.

R-911 New Lift Trucks—Shows latest trends in lift truck design. Hyster Co., 2902 N.E. Clackamas St., Portland 8, Oregon.

R-912 Materials Handling For Textiles—Shows how fibre trucks can increase efficiency, protect products. National Vulcanized Fibre Co., Wilmington 99, Del.

R-913 Continuous Power Conveyor—Complete information on Zig-Zag Conveyor. Richards-Wilcox Mfg. Co., Aurora, Ill.

R-914 Stresses On Overhead Tracks —Covers track peening, discusses stresses. Cleveland Tramrail Div., Cleveland Crane & Engineering Co., Wickliffe, Ohio.

R-915 Scientific Materials Handling —Describes various materials handling devices, includes pictures. Bennett Rose Co., Box 8, Roebuck, S. C.

R-916 Overhead Materials Handling —Treats twin fan ceiling cleaners and shock proof electrification as well. Louden Machinery Co., Fairfield, Iowa.

R-917 Little Packaging Library — Series of booklets covers the business of shipping in corrugated boxes. Hinde & Dauch, Sandusky, Ohio.

R-919 Improved Materials Handling —"Materials in Motion" describes use of fibre containers. National Vulcanized Fibre Co., 1056 Beech St., Wilmington, Del.

R-920 Trucks Doff, Store, Become Spooler Tray—Brochure tells how mobile boxes are being used as doff boxes, storage boxes, and spooler trays on Barber-Colman Spooler. Fisher Mfg. Co., Hartwell, Ga.

Shorts and Remnants

(Continued from page 22)

theatre marquee—"The Blob—Bloody Bloat of Man's Foulest Slime" (Good movie for the kiddies?).

► Since ole S&R resolves to "Be nice to everyone" including editors, he'll mention that TI Editor **George Dockray** caught an error in an Atlanta newspaper column of Leo Aikman which said that when Dundee Mill #1, Griffin, Ga., opened in 1888, wages were 60¢ an hour and the mill Pres. made $1,000 a year. Says Geo.: 60¢ an hr. is much more than the Pres. made. Maybe that's why they say "in the good old days." Leo replies: George, it's a goof; it should have said 60¢ a *day*. Well that's that for 1888.

► Since we are being nice to editors, we'll also include friends of editors and of their fathers. **Wm. J. Liske** of Cyril Johnson Woolen Co., Stafford Springs, Conn., got an enthusiastic response at the 75th Anniversary of Nat'l Assn. of Woolen & Worsted Overseers with his poem dedicated to this occasion. Now Mr. Liske remembers TI editor Dockray very well, as he worked with his father at the old Holden & Leonard Co. plant at Bennington, Vt. If we weren't just running down to the end, and if this wasn't "Shorts & Remnants" we'd print the poem in full; but here are a few stanzas, thanks to Mr. Liske.

Seventy Fifth Anniversary Celebration,
A diamond milestone, marks the way;
To the memory of those, gone before,
We should dedicate this special day.

Joseph Wade was the man of vision,
That planned this National Loop;
Small, back in eighteen eighty-three,
It has become a powerful group.

Man-made fibers, by the hundred,
Have arrived upon the scene;
New talents must be developed,
There's no time to sit and dream.

We as textile men are challenged,
And high quality is our goal;
It will take hard work and courage,
That at times will try your soul.

So while expressing the joy of friendship,
Keep hope active in your heart;
We can still stage a revival,
If each one will do his part.

Three quarters of a century passed,
Taking their toll of textile men;
If we meet again on the Judgment Day.
We'll be talking of textiles then.

► So look out next month for a special feature on PURCHASING problems, and for a bigger and better KNITTING Section in April.

► "In 1959 TI will be fine"—our promise and new motto.

► And as the little dog sitting on the ice says, "My tale is told."

Personal NOTES ABOUT MEN YOU KNOW

Alexander Westreich is now chairman of the board of Pellon Corp., and his position as president has been filled by **Sven Sternberg. Alexis C. Coudert** of Coudert Brothers is vice-chairman of the board. **William M. Klothe** and **Werner Jacob** continue as vice-presidents, the former in charge of sales and the latter directing production in the Pellon laboratories and manufacturing plant in Lowell, Mass. **Rolf A. Merton** was re-elected treasurer of the corporation, and **James E. Hughes** has been elected secretary.

Felix B. Montgomery, Jr., has been elected president and treasurer of Pisgah Mills, Inc., Brevard, N. C. Other new officers are: **F. B. Montgomery, Sr.,** first vice-president; **W. M. Melton,** second vice-president; and **R. C. Muse,** secretary. Mr. Melton will serve as assistant to the president and Mr. Muse will be comptroller.

Howard A. Kaiser has been elected president of Burlington Hosiery Co., a member of the Burlington Industries, Inc., organization. **Thomas E. Sain** and **G. E. Low** have been appointed to executive vice-president posts. Mr. Sain is in charge of all manufacturing operations with offices in Greensboro. Mr. Low is in charge of ladies' unbranded hosiery sales. **Norman J. Campbell** has been appointed vice-president in charge of seamless hosiery manufacturing operations with headquarters in Harriman, Tenn. **Henry Dixon** has been named to a vice-presidency and continues in charge of finishing operations with headquarters in Burlington, N. C. Another recently-named vice-president is **W. H. May, Jr.,** who continues in charge of ladies' hosiery sales in the southern area. **James D. Maver** also was named vice-president and will continue his present duties in charge of sales for the Bur-Mil Cameo ladies' hosiery brand. * * * **Dwight Holshouser** has been named personnel and public relations manager for the Cramerton division, replacing **George Courtney, Jr.,** who is transferring to Greensboro. * * * **G. L. Staff** has been named executive vice-president and a director of Raeford (N. C.) Worsted Corp., a member of the Burlington group. **Norman Duberstein** and **E. H. Hines, Jr.,** have also been elected directors.

Frank C. Sherrill has been named technical superintendent of Joanna (S. C.) Cotton Mills Co. He will direct the industrial engineering and technical services department. Succeeding Mr. Sherrill as chief industrial engineer is **John E. Willingham.** Director of industrial relations is the new title of **James P. Sloan** who has assumed supervision of employee welfare, personnel practices, publicity and publications, and management - employee communications. **David Boland** has succeeded to Mr. Sloan's former position of personnel manager.

Mr. Sherrill

Mr. Willingham

Mr. Sloan

Mr. Boland

Charlie L. Lashley has retired after having served Callaway Mills Co. in various capacities for 44 years. His most recent position was overseer of packing and production supervisor at the Unity spinning plant in LaGrange, Ga. He was succeeded in that position by **Jack Market.** Also at the Unity plant, **Roy Lang** was promoted to overseer twisting and **Vauban Ashmore** was named assistant overseer of twisting. * * * At the Elm City plant, **Alton Cadenhead** has been named overseer carding, spinning,

Personal NOTES ABOUT MEN YOU KNOW

twisting, and winding. **Robert O. Whitley** has begun his new duties as production supervisor. He continues as designer. **Lewis Price, Jr.,** has been made assistant production supervisor.

The American Association of Textile Chemists & Colorists has elected **Weldon G. Helmus,** vice-president of Fair Lawn (N. J.) Finishing Co., president for the coming year. **C. T. Anderson,** Philadelphia, Pa., office manager of Ciba Co., Inc., was elected to represent the Central Atlantic Region; and **W. George Parks,** head of the University of Rhode Island's chemistry department, was chosen to represent the New England area. * * * New officers for the Southeastern Section, AATCC are: **R. B. Hallowell,** Coats & Clark, Inc., Albany, Ga., chairman; **W. B. Amos,** Jefferson (Ga.) Mills, vice-chairman; **Leon Tigler,** Reeves Bros., Inc., Columbus, Ga., treasurer; and **J. H. Richardson,** Russell Manufacturing Co., Alexander City, Ala., councilor; **W. E. Tiller,** Tennessee Corporation, Atlanta, Ga., was re-elected secretary.

Mr. Helmus

Mr. Jervis

S. Spratt Blankenship has accepted a position as overseer of the wool spinning department of Bigelow-Sanford Carpet Co., Inc.'s Bristol, Va., yarn mill. He was formerly with American Cyanamid's Santa Rosa Plant, Pace, Fla. * * * **Joseph Jervis, Jr.,** has been named plant manager of Rocky River Mills, Calhoun Falls, S. C., Bigelow-Sanford's major yarn-making plant. He was formerly plant manager of the firm's Bristol, Va., yarn mill.

Joseph J. Bird has been elected executive vice-president of Kayser-Roth Hosiery Co., Inc., a wholly-owned subsidiary of Kayser-Roth Corp. Named vice-presidents were **Duncan A. MacKenzie,** production manager of the ladies division, and

Leaders of Carded Yarn Association: (l to r) J. A. CONNER, Hyde Park Mills, Inc., Covington, Tenn., retiring president; A. J. M. WANNAMAKER, Orange Cotton Mills, Orangeburg, S. C., president; L. E. BOWEN, Tifton (Ga.) Cotton Mills, first vice-president; O. L. MORETZ, Carolina Mills, Inc., Maiden, N. C., second vice-president; and E. O. FITZSIMONS, Charlotte, N. C., who was re-elected executive vice-president, secretary, and treasurer.

S. Carlysle Isley, in charge of public and industrial relations. Executive offices of the manufacturing division are located in Burlington, N. C., while sales, advertising, and administration are handled from the New York City offices. Mr. Bird has announced the following organizational structure for the firm: In Alamance County, N. C.—**Gorman L. Allred,** superintendent, ladies seamless knitting; **Ralph C. Braxton,** superintendent, full-fashioned division; **T. R. Caudill,** production manager, men's division; **Glenn M. Coble,** general superintendent, seamless knitting division; **Marvin H. Comer,** general superintendent, yarn processing and boxmaking operations; **James L. Curry,** superintendent, ladies' finishing; **Charles Curtis Grady,** assistant general manager, seamless knitting division; **J. Addison Hill,** assistant treasurer and comptroller; **J. Wade Isley,** superintendent of men's knitting division; **John R. Parks,** manager, methods and standards department; **Samuel T. Ross, Jr.,** purchasing agent; **E. C. Sanders,** general superintendent, full-fashioned knitting and maintenance; **Clifton S. Sharpe,** superintendent of men's knitting division; **Carl W. Thomas,** assistant general superintendent, yarn processing and boxmaking operations; **Herbert W. Wade,** director of purchasing; **Robert P. Wagoner,** superintendent, men's finishing division. In Concord N. C.—**Lawrence T. Carter,** superintendent, ladies' finishing; **W. B. Cothran,** general superintendent; **Hugh M. Grey, Sr.,** president, Alamance Industries; **C. Houston Lipe, Jr.,** superintendent, full-fashioned division; **T. Bynum Smith,** superintendent, seamless knitting division. In Dayton Tenn. **Alton Parker Bean,** superintendent knitting division; **Elmer E. Kelly,** vice-president in charge of Dayton division: **Freeman L. Looney,** superintendent, finishing division; **Leon Young,** general superintendent. In Greensboro, N. C. —**John P. Bullard,** superintendent, seamless knitting; **Allen S. Johnson,** general manager; **H Cullen Swindell,** assistant general manager. In Hickory, N. C.—**John Corey,** production manager, Duke division; **Eugene D. Hall,** superintendent, men's division; **T. R. Kramer,** vice-president in charge of Duke and Maiden division; **Hubert Morrow,** superintendent, Maiden division: **K. T. Williams,** general superintendent, Duke and Maiden divisions. In Pittsboro, N. C. —**Joe T. Phillips,** superintendent.

Tom E. Peden has resigned as plant manager of Abbeville (S. C.) Mills Corp. **Frank Hawthorne** has become technical superintendent. Planning, production, and control will be under the supervision of **John Broome,** who will have **Jack Coursey** as his assistant.

The personnel division of the South Carolina Textile Manufacturers Association has elected **M. V. Wells,** personnel director of Greenwood (S. C.) Mills, chairman. **Jack Reems,** personnel director of Abbeville (S. C.) Mills Corp., was elected vice-chairman.

Henry W. Swift, president and treasurer of Swift Spinning Mills, Inc., Columbus, Ga., has been elected president of the Textile Education Foundation, Inc. **J. M. Cheatham,** president of Dundee Mills, Inc., Griffin, Ga., was named vice-president, and **R. Houston Jewell,** vice-president of Crystal Springs Bleachery, Chickamauga, Ga., was elected treasurer.

Harold O. Carpenter, Jr., has been named to handle production planning and scheduling for five grey goods plants of Cone Mills Corp. He will work with the Proximity Plant, Greensboro, N. C., the Pineville (N. C.) Plant, the Minneola Plant, Gibsonville, N. C., the Edna Plant, Reidsville, N. C., and the Dwight Division, Gadsden, Ala. * * * **George F. Walz** has assumed his duties as overseer of quality control at Proximity Prints Works. He is responsible for the print works laboratory and related operations.

Exposition Cotton Mills Co., Atlanta, Ga., has promoted **W. A. Pridmore** to superintendent of weaving.

A division for the production and distribution of women's hosiery directly to the retail trade has been established by Holt Hosiery Mills, Inc., Burlington, N. C. **Sanford P. Brass** has been named president of the new division. Other officers are **James L. McCormick** and **Ralph M. Holt, Jr.**, vice-presidents, and **James A. Holt**, general manager. Offices for the division are at 366 Fifth Ave., New York City.

Dr. W. T. Kroese (Netherlands) has assumed the office of president of the International Federation of Cotton and Allied Textile Industries for a two-year term. Other new officers are: **Dr. Kurt Dieterich** (Federal Republic of Germany) and **Alfredo Sedo** (Spain), vice-presidents.

H. J. Spruill has been appointed manager of the Cleveland, Tenn., yarn processing mill of The Duplan Corp.

Mr. Spruill

Mr. Plummer

Chicopee Manufacturing Corp. has named **Charles H. Plummer** director of nonwoven fabric research at its Research Division in Milltown, N. J.

OBITUARIES

Francis P. Bacon, 88, retired textile executive, Tryon, N. C.

Philip H. Bestwick, 72, treasurer of Hilltop Laces, Inc., Coventry, R. I.

Abram Brawer, 78, former partner in Brawer Bros. Silk Co., Paterson, N. J.

Paul E. Bruck, 57, salesman for Stein Hall & Co., Inc., New York, N. Y.

John Cuthbertson, 56, former superintendent of Glen Alpine Knitting Mills, Glen Alpine, N. C.

Newton G. Hardie, 56, manager of the Walhalla, S. C., plant of Chicopee Manufacturing Co.

Dotry W. Lance, 78, retired assistant superintendent of the International Shoe Co., Malvern, Ark.

David Leonard Malcolm, 75, retired president of Linen Thread Co., Inc., Wykoff, N. J.

John Marshall, Sr., 63, John Marshall Industrial Machinery Co., Fall River, Mass.

M. D. Pittman, retired superintendent of Burlington Mills, St. Pauls, N. C.

R. P. Robinson, 74, president and treasurer of Robinson Top & Yarn Dye Works, Lowell, Mass.

Harry Roberts Stephenson, 69, retired president of Southern Bleachery & Print Works, Paris Mountain, S. C.

Frederick J. Streibel, 79, retired superintendent of Bachmann Uxbridge Worsted Corp., Uxbridge, Mass.

Harry Swartz, 58, vice-president and director of Thomas Textiles, Inc., Athens, Ga.

Louis J. I. Symonds, 62, vice-president of Providence Pile Fabrics Corp., Puritan Fabrics Co., and Quincy Dye Works, Providence, R. I.

William Syrop, 63, president of Crompton-Richmond Co., Flushing, L. I., N. Y.

F. J. Weston, 67, owner of Wyncote Hosiery Mills, Wyncote, Pa.

Edward Whitten, 46, overseer of weaving of Fairfax Mill division of West Point Manufacturing Co., West Point, Ga.

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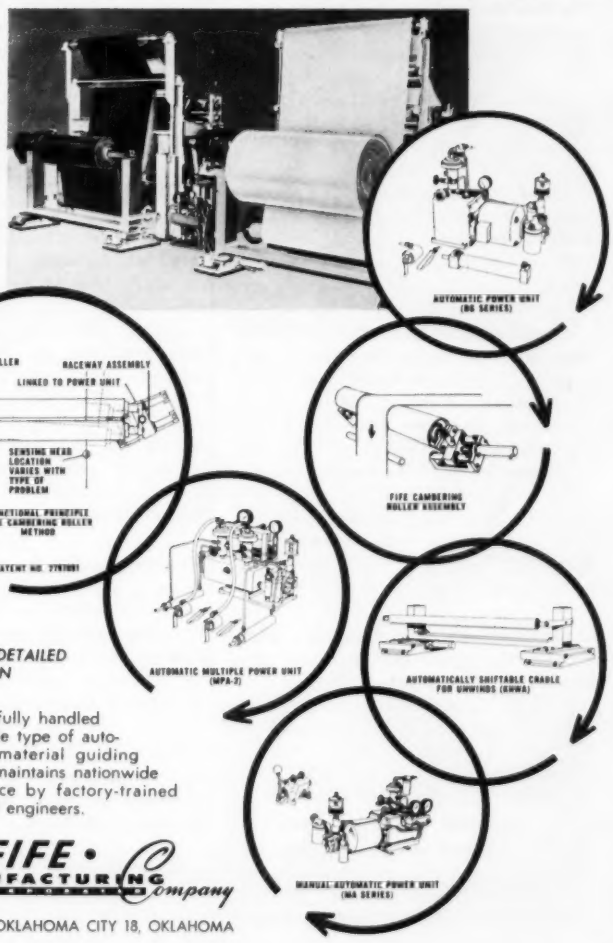
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What the TEXTILE MILLS are doing

Weaving facilities have been enlarged at the Easley, S. C., plant of **Woodside Mills, Inc.** A completely new air change system has also been installed. * * * Woodside's Greenville, S. C., plant is adding feeler-motions to all looms as part of its program for upgrading fabric quality. * * * The Haynsworth Mill, Anderson, S. C., celebrated its tenth anniversary by holding open house. The celebration was attended by more than 200 business and civic leaders. Especially honored were 34 employees who have worked at Haynsworth since the mill first opened.

Construction has begun on a new warehouse and office building for the **Callaway Mills Co.** in the Brook Hollow industrial district in Dallas, Tex. The new facility will be a southwest distribution point for carpets. * * * The recently enlarged chemistry laboratory of the Research and Development division, Callaway Mills Co., LaGrange, Ga., affords additional up-to-date facilities for the performance of assignments in the field of textile chemistry. A knife coating machine for quickly evaluating new finishes and a two-roll pad were among the new items provided.

A cotton knit brief with a stretch seat, guaranteed for the life of the garment, has been developed by **J. E. Morgan Knitting Mills, Inc.,** Tamaqua, Pa. The firm has been notified that a patent will be issued shortly. * * * The company has purchased a residence for use as offices. The knitting department of the firm is now in Strausstown, Pa., and plans have been made to open a new sewing department there.

Chadbourn-Gotham, Inc., has purchased the plant facilities and organization of **California Hosiery Co.,** Anaheim, Calif. Chadbourn-Gotham management announced that plans will go into effect at once to increase the facilities of the newly acquired property.

Cone Mills Corp. has given 9.6 acres of land in Greenville, S. C., for the construction of a neighborhood YMCA. * * * Employees of Cone's Granite Finishing Plant, Haw River, N. C., held open house recently for their families and friends.

Lynne Knit Hosiery Mills has been formed in Mount Airy, N. C., to manufacture infants' and children's hosiery. Control of the new organization is owned by Heathcote Hosiery Co., mill agents.

The Kendall Co. has completed a 10,000-sq ft addition to the plant in Seneca, S. C., which was recently purchased from Abbot Worsted Co.

Officials of Tioga, Inc., have purchased the plant and operations of the recently closed Hazleton, Pa., plant of Duplan Corp. and have formed **Hazleton Weaving Corp.** The Jacquard looms are already in operation. A modernization program will be initiated in the near future.

The scattered production set-up of **Herbert Mills Co.** has been streamlined and departmentalized in an expanded modern one-story building in Marion, S. C.

Control of **Chemical & Rubber Corp. of America,** Newark, N. J., manufacturers of non-woven nylon carpeting and rugs and foam rubber carpeting and rug underlays, has been acquired by **Scranton Corp.** (formerly Scranton Lace Co.). The firm has also acquired control of Storm-Vulcan, Inc., Dallas, Tex., machinery and tool manufacturers. Both firms will be operated as wholly-owned subsidiaries. No changes in management are anticipated.

Joseph Kakassy and others of Chicago have assumed the controlling interest in **Brookline Fabrics, Inc.,** Greenville, S. C. Ferdinand Mostertz & Sons are managing the plant and operations have not been interrupted.

The Old Timers Club of the **Joanna (S. C.) Cotton Mills Co.** sponsored a Hobby and Craft Fair October 17 and 18.

Completion of a licensing agreement with **Davies Coop, Ltd.,** has expanded the foreign operations of **Alamac Knitting Mills, Inc.,** Indian Orchard, Mass., into Australia. The Australian company will do the spinning, dyeing, and finishing of the fabrics, in addition to the actual knitting operation.

Effective January 1, 1959, **Fulton Bag & Cotton Mills,** Atlanta, Ga., changed its name to **Fulton Cotton Mills** in line with its decision to drop the manufacture of bags and concentrate on industrial fabrics. * * * Fulton has been licensed by Indian Head Mills to apply the Pequot Easy-Care finish to osnaburgs constructions. The exclusive agreement is said to represent the first application of the "no-iron" finish to osnaburgs. The finish will be applied to drapery, slip covers, table cloths, napkins, bedspreads, and clothing fabrics.

The full-fashioned machinery, inventory, and brand name of **Oakbrook Hosiery Mills, Inc.,** has been sold to **John H. Guenther Hosiery Co.** Guenther has combined its West Reading, West Lawn, and Birdsboro, Pa., seamless operations in one plant in Reading.

An addition to the **P. H. Hanes Knitting Co.** plant in West Jefferson, N. C., is expected to be ready for occupancy early in 1959. The new unit will double the facility's floor space.

A two-story brick and steel addition has been started by **Ladd Knitting Mills, Inc.,** Reading, Pa. The new structure will provide 22,000 sq ft of floor space. Ladd only recently topped the 1,000 mark in employment.

William G. Leininger Knitting Co., Mohnton, Pa., celebrated its 60th anniversary last November. The firm recently turned out its 335 millionth pair of hosiery.

Reorganization of the production and distribution setup of **Lincolnshire Fabrics, Ltd.,** has begun with the shift of production facilities to the **Northfield (Vt.) Mills,** and other wholly owned Goldfine mill operations. The move is expected to make for a completely integrated manufacturing arrangement. In addition to its present line of vicuna and Iranian cashmere fabrics, Lincolnshire is adding a range of Mongolian cashmere coatings and suitings.

Sayles Finishing Plants, Inc., Saylesville, R. I., has completed its streamlining program which consisted mainly of concentrating finishing processes and auxiliary opera-

tions in a limited number of buildings for greater efficiency. The firm plans to sell or lease outlying buildings and land not essential to the operations of the concentrated assemblage.

Seminole Mills, Statesville, N. C., has announced plans to add 125 new looms to step up production of decorative and industrial glass fiber fabrics. Space for the additional equipment will be made in present buildings.

A new one-story building is being erected at Ewen, N. Y., by **Kingston Knitting Mills** in which shipping facilities and general offices will be consolidated. Space in the Kingston, N. Y., mill, now being utilized for these offices, will be used to expand production. The building will be completed about the middle of the year.

A total of 80.7 per cent of the capital stock of **Continental Mills,** Lewiston, Me., has been acquired by **Powdrell & Alexander, Inc.,** through an exchange of stock.

Crown Carpet Mills has purchased the Bates' National Chenille plant in Dalton, Ga. According to Murray Sobel, vice-president and general manager in charge of Crown's operations, the firm has closed its shipping and warehouse operation at Fort Oglethorpe, Ga., and has moved it to the new plant in line with the company's policy of concentrating the rug operations in Dalton.

Hanover Mills, a subsidiary of **Diamond Mills Corp.,** has opened in Wilmington, N. C. The firm manufactures hosiery and employs 300 persons.

A total of 32 South Carolina textile plants participating in the safety contest sponsored by the state's textile association reported no lost-time accidents. Receiving cups and certificate awards during the 21st annual Industrial Commission conference held in Columbia recently were: Appleton Mills, Anderson; Dunean Plant, Greenville; Piedmont Plant; Mohawk Plant, Clemson; Watts Mills, Laurens; Victor, Greer, and Republic Plants No. 1 and 3, Great Falls; Aragon Plant, Rock Hill; and Apalache Mill, Greer; all members of the **J. P. Stevens & Co., Inc.,** group; the Celriver plant of **Celanese Corp. of America,** Rock Hill; **Judson Mills,** Greenville; **Laurens Mills** and **Pacolet Mfg. Co.,** Deering, Milliken & Co., Inc., plants; Limestone Manufacturing Co. div. of **M. Lowenstein & Sons, Inc.,** Gaffney; the Winnsboro Plant of **U. S. Rubber Co.;** Beaumont division of **Spartan Mills,** Spartanburg; **Joanna Cotton Mills Co.;** the Ninety-Six Plant, the Durst Mill, Matthews Plant No. 1, and Harris Plant of **Greenwood Mills,** Greenwood; the Grendel Plant, Greenwood, and the Toxaway Plant, Anderson, of **Abney Mills;** the McCormick Plant of **Excelsior Mills;** the Walhalla Plant of **Chicopee Manufacturing Corp.;** Vaucluse division of **Graniteville Co.;** the Arial and Elljean plants of **Alice Manufacturing Co.,** Easley; and the Chesnee Mill of **Reeves Brothers, Inc.**

Swiss Bleachery, Weehawken, N. J., has ceased operations. According to Ram Chetejian, general manager, the firm finds it "impossible to make a profit with ever-increasing costs."

A brochure entitled "This is the Story of Tycora . . . First Family of Modified Yarns," has been issued by **Textured Yarn Co., Inc.,** Philadelphia, Pa. Illustrated throughout, the booklet gives a brief outline of the research behind the development of Tycora, as well as present uses and a projection of the future of the yarn.

A three-story addition to the bleachery division of **Thomaston (Ga.) Mills** is under construction. According to J. T. Hightower, president, this is the third expansion of the bleachery in ten years. During the same period, employment in the division has increased by approximately 120.

Virginia Mills, Inc., Swepsonville, N. C., has received a citation as a result of its employees having worked a total of 1,631,310 man-hours without a lost-time accident. The citation was awarded by the N. C. Industrial Commission as a result of a safety contest conducted by the commission and the N. C. Textile Safety Association.

The Waldrich Co. has closed its Passaic, N. J., division, The Manhattan Print Works. All work has been consolidated in the Delawanna, N. J., location. All warehousing, now in rented plants in several locations, will be combined in the 175,000-sq ft building formerly occupied by Manhattan.

The Shawmut (Ala.) Mill division of **West Point Manufacturing Co.** recently celebrated its 50th anniversary.

Colonial Woolen Mills Co. has completed a two-year program of expansion in Cleveland, O., aimed at

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and
MACHINERY
DAMAGE
with
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HI-POWR
PERMANENT
SPIKED APRON
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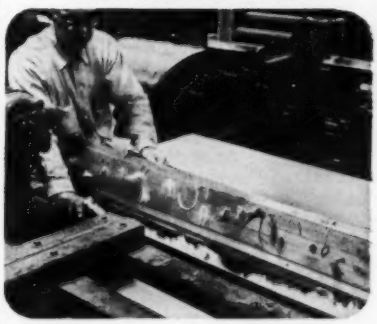

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centralization of its facilities and those of **Winona (Minn.) Textile Mills, Inc.** Operations in Winona have been discontinued. Colonial has increased the spinning capacity of the Cleveland mills 40 per cent. Equipment has been added and facilities increased in carding, blending, picking, and other departments.

A certificate of incorporation has been filed for the **North Hickory Dyeing & Processing Co.**, Hickory, N. C. Principals are Glenn C. Shoaf, Novelle I. Shoaf, and Burie P. Isenhour, who started the firm three years ago as a partnership.

A new firm for the production of knitted fabrics of worsted, cotton, and synthetic yarns has been formed in New York City. Principals of the new organization, called **Dana Textile Mills, Inc.**, are George Spitz, president, and Andrew Tessler, vice-president.

Dan River Mills, Inc., Danville, Va., recently began production of nonwoven fabrics, according to a statement by W. J. Erwin, company president. First sales are being made in wiping cloths, with future uses being planned in such items as garment linings. * * * More than half of Dan River's sales in terms of yardage is now grey goods, since the acquisition of Woodside Mills and Alabama Mills, Mr. Erwin pointed out; but dollarwise, grey goods account for 35% of volume. * * * Capital expenditures were about $5 million in 1958, Mr. Erwin said, and are expected to be "roughly the same" in 1959. 150 new shuttleless looms have been purchased for installation in the Danville mills for use in the manufacture of pillow case goods.

Avondale Mills, Inc., has announced plans to spend one and one-half million dollars on additional improvements for the fiscal year ending August 31, 1959. The spending will be spread around among the company's mills with the plant at Stevenson, Ala., receiving particular attention.

Ballston-Stillwater Knitting Co., Inc., Ballston Spa, N. Y., is celebrating its 40th year of operation. The firm now has three main plants, six warehouses, and its own spinning mill.

SUPPLIERS News

WHAT THEY ARE DOING

Dr. Hugh M. Brown, retired head of the School of Textiles at Clemson College, S. C., has been appointed textile consultant to **The Sheffield Corp.** Dr. Brown will assist in the development of new types of pneumatic and electronic gauges and measurement standards for textile materials ranging from raw stock through finished product.

Dr. Brown

Mr. Zalkind

Benjamin J. Zalkind has joined **Roberts Co.** in connection with its recently-established worsted spinning machinery division. He was previously operations manager of National Worsted Mills, Jamestown, N. Y. * * * Two wholly-owned subsidiaries, Roberts Co. de Mexico, S. A. and Roberts Co., S. A., of Coire, Switzerland, have been established as the initial step of an extensive foreign development program. A testing and research program on all phases of yarn manufacturing and fabric development has also begun at new facilities in Milan, Italy.

Ralph Gossett & Co. has been appointed southern representative by American Paper Products Co., Nylco Products, Inc., Brawer Bros. Silk Co., Inc., and Para-Chem, Inc. In addition to the textile supplies and machinery division, the firm has formed a yarn sales division and a textile chemicals division for more efficient handling of its new accounts. * * * H. R. Hold has been named sales representative in Virginia and the eastern section of North Carolina.

Universal Winding Co. has promoted John J. White to sales administration manager, replacing the late Thomas L. Cotter. Mr. White will supervise all activities at the home office pertaining to machinery and parts orders. At the same time, Ralph F. Cox was named administrative assistant to Mr. White, Thomas H. Farrell was appointed to the newly-created position of machine sales technician on Unifil loom winders, and Samuel J. Stepak was promoted to administrative assistant to the service manager. * * * The company has announced a large number of orders for Unifil loom winders. Repeat orders, constituting over 80% of the total, have come from such companies as Burlington Industries, Inc., Keystone Weaving Mills Co., Inc., Schwarzenbach-Huber Co., Inc., and J. P. Stevens & Co., Inc. New orders have been received from Beaunit Mills, Inc., Glen Raven Silk Mills, and Marion Manufacturing Co. Consolidated Textiles, Ltd., has equipped its Joliette plant with Unifil loom winders. This is said to be the first installation of such machinery in any Canadian mill.

L. J. (Larry) Speizman has joined the **Morris Speizman Co., Inc.**, as assistant to Ted Valenstein, vice-president in charge of sales.

Mr. Speizman

Mr. Richardson

Olan Richardson has been elected chairman of the board of **Southern States Equipment Corp.** and has assumed the duties of the chief executive officer. At the same time, Glenn Mitchell was elected president with the duties of chief operations officer and W. C. Mitchell was chosen executive vice-president with the duties of chief finance officer.

A 50 million-pound-a-year plant to manufacture caprolactam, an intermediate chemical for Type 6 nylon fiber and plastics, will be constructed in Beaumont, Tex., by **E. I. du Pont de Nemours & Co., Inc.** The plant is scheduled for completion the latter part of 1960.

H. J. Mackin has been promoted to assistant manager, eastern region, **Goodyear Tire & Rubber Co.,** industrial products division. His headquarters remain in New York City. B. E. McClelland has been moved up to manager of the division's New York City district, and H. L. Jinkerson has been named assistant manager. It was announced that the firm's district operations at Boston are now being administered from the New York City office. G. M. Landon serves the Boston district as field representative.

The Pneumafil Corp. has signed a long-term lease for 35,000 sq ft of space on the first floor of the former Kendall Mills plant in Thrift, N. C. The firm will continue operation at its present plant in Charlotte, N. C., and will use the Thrift location to expand present facilities.

The main office and factory of **R. & J. Dick Co., Inc.,** has moved into its new plant in Totowa, N. J.

Walter J. Romaine has been appointed sales representative for the textile chemical department of **E. F. Drew & Co., Inc.** He will service the company's accounts in the New England area.

Joseph B. Funk and John F. Doran have been elected vice-presidents of **Textile Banking Co.** Mr. Funk is in charge of the credit department and Mr. Doran is an account executive.

Union Special Machine Co. has purchased the manufacturing facilities of **Lewis Sewing Machine Co.** and **Columbia Sewing Machine Corp.** The Lewis manufacturing facilities have been transferred to Union Special's plants at Chicago and Huntley, Ill., but the Columbia facilities remain intact in New York City.

United Ultramarine & Chemical Co., Inc., has been formed with executive offices in New York City. With sales agents and warehousing throughout the United States and Canada, the new firm will market a full range of Ultramarine Blue pigments and allied chemicals manufactured by the parent company, **Vereinigte Ultramarin Fabriken A. G.** of Cologne, Germany.

Reynolds Metals Co. has appointed **Barnhardt Brothers Co.** selling agent for aluminum yarn in Virginia, North and South Carolina, Georgia, Florida, Tennessee, Kentucky, Mississippi, Alabama, Arkansas, Louisiana, Missouri, and Texas.

Jack Abell has been appointed a sales representative for **Anheuser-Busch, Inc.,** bulk corn products in the South Carolina territory.

Mr. Abell

Mr. Reid

In addition to his re-election as assistant secretary, W. R. Reid, Jr., has been elected a vice-president of **The Torrington Co.** He is in charge of all the company's overseas operations as well as the Canadian and United States machine needle operations.

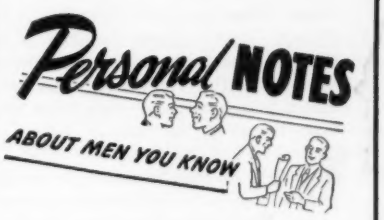
Clarence B. Noelting has been elected president of **Faultless Caster Corp.,** and Walter W. Noelting has been chosen vice-president and secretary.

Edward T. Taws, Jr., has resigned as vice-president of **The Fletcher Works** to assume the presidency of **Fletcher Southern,** a newly-organized firm in which Mr. Taws is the major stockholder. The new company has purchased a one-story steel and concrete building on a 20-acre site on U. S. Highway #1, at Southern Pines, N. C., and will manufacture shuttles, blocks, battens, and other components of narrow fabric looms. The new firm will also act as southern agent for the Fletcher Works.

The international division of **Food Machinery and Chemical Corp.** has completed an expansion in hydrogen peroxide capacity by its Mexican affiliate, Electro Quimica Mexicana, S. A. Increased demand for 50% strength hydrogen peroxide by the cotton textile industry, as well as other industries, in Mexico necessitated the expansion, according to the announcement.

Hubert A. DesMarais has been appointed southern sales manager for **Francolor, Inc.,** with headquarters in Rock Hill, S. C. Mr. DesMarais will be responsible for serving customers in Georgia, North and South Carolina, and Virginia.

Robert F. McClellan has been elected vice-president of **Nopco Chemical Co.** He has also been appointed general sales manager of the industrial division, in which position



Read These Regular Features of Textile Industries Each Month!

SUPPLIERS News
WHAT THEY ARE DOING

Mrs. Wrightson
Metro-Atlantic

Mr. Phillips
N. Y. & N. J. Lub.

Mr. Williams
Whitinsville

Mr. Mettee
American Cyanamid

he will supervise the sales activities of the departments serving textiles, paper, detergents, etc.

Harvey L. Spaunburg has been elected chairman of the board of **Veeder-Root, Inc.**, succeeding John H. Chaplin, deceased. At the same time, Wilbur C. Stauble was named president of the firm, and Andrew J. Rebmann, vice-president and secretary, was elected to the board.

Joseph L. Huckabee has been appointed technical sales representative of the **Wallerstein Co., Inc.**, technical division in the Carolinas and Virginia area.

Lanier Williams has been named representative for the complete line of spinning and twister rings and accessories of **Whitinsville Spinning Ring Co.** His territory includes Georgia, Alabama, and Tennessee. Mr. Williams' home address is P. O. Box 222, West Point, Ga.

F. A. Young Machine Co. has leased an additional building in Gastonia, N. C., to be used as an assembly plant. The building gives the firm 4,000 sq ft of additional space.

Willcox & Gibbs Sewing Machine Co. has acquired the Thermatron division of Radio Receptor Co., Inc. Thermatron is a designer and manufacturer of high frequency electronic welding equipment. The activities of the new acquisition will be operated as a separate division of Willcox & Gibbs and will be known as The Thermatron Co., Electronic division of Willcox & Gibbs Sewing Machine Co.

Rhita Wrightson has been appointed to the newly-created post of assistant technical director for the southern division of **Metro-Atlantic, Inc.** Mrs. Wrightson's headquarters are at the Greenville, S. C., laboratories. * * * New merchandising and promotional offices have been opened at 6 E. 30th St., New York City. Facilities to show benefits derived from use of Ranedare are provided as well as displays of new developments for treating textiles with non-chlorine retentive resins and wash-and-wear finishes.

Fred W. Phillips has been named southern district manager of **New York & New Jersey Lubricant Company.** He succeeds the late Lewis W. Thomason, Jr.

John Hilldring has been elected chairman of the board of **General Aniline & Film Corp.** At the same time Philip M. Dinkins was elected president.

Dino D. Cimma has joined Geigy Dyestuffs division of **Geigy Chemical Corp.** to direct sales and technical services of Tinolite textile pigment colors. His headquarters are in Ardsley, N. Y.

Walter H. Hindle has accepted a position with **Air Reduction Co., Inc.**, as consultant in connection with Airco's investigation of polyvinyl alcohol fiber.

Edgar F. Wendt has retired from his post as president of **Buffalo Forge Co.** Succeeding him is William R. Heath. Mr. Wendt will continue an active interest as a director.

Marion Wallace Porter has joined the **Chemstrand Corp.** as a technical service representative with headquarters in Decatur, Ala. * * * Edmund L. Lauber has been named director of merchandising. He has appointed Frank W. Hartmann merchandising specialist in domestic and home furnishings, and Barrett F. Emmert merchandising specialist in market fabrics. * * * Harry Cramer has been promoted to manager of Chemstrand's district sales office at Charlotte, N. C. * * * M. R. Dalton has been appointed director of sales with headquarters at the firm's New York City offices. He will supervise sales of chemical textile fibers. * * * Paul W. Runge has been promoted to executive director, nylon, and Robert E. Smith has been named executive director, Acrilan. Messrs. Runge and Smith will be located at Chemstrand's New York offices.

Stellamcor, Inc., has been appointed agent for the sale of Manra quality control equipment in the U. S. and Canada. This equipment is manufactured by Louis Newmark, Ltd. of England.

American Cyanamid Co. has begun construction of a small-scale special production plant near Pensacola, Fla. The prototype unit will permit continuing improvements in processes and products, serve as a trial area for new equipment and techniques, and speed the production of custom lots of fiber. * * * Martin B. Friedman will direct advertising and sales promotion activities for the company's dyes department. He will continue to supervise advertising and sales promotional efforts of the textile chemicals department. M. H. Mettee has been appointed sales manager of the department. His office will be in the Bound Brook, N. J., headquarters. * * * Max W. Winkler has joined the fibers division as technical service representative, and Lynn G. Goodnough, Jr., has been appointed to the sales and merchandising staff. Mr. Goodnough serves as a representative for the division's home furnishings department.

The Providence, R. I., offices of **American Enka Corp.** have been moved to larger quarters at 1211 Industrial Bank Bldg. Robert Rodermund has been assigned to the office as a technical representative for the New England territory.

First shipments have left the new cellophane plant of **American Viscose Corp.** in Marcus Hook, Pa. Within several months officials expect the plant to be producing at its rated capacity of 50 million pounds per year. * * * Basil F. Millican has been promoted to Atlanta, Ga., district sales manager of the corporation's film division.

Baker Manufacturing Co., Inc., has signed contracts giving the firm the exclusive franchise in South Carolina for all material handling equipment manufactured by the Baker Industrial Trucks division of **Otis Elevator Co.**

Mr. Blossom
Celanese Corp.

Mr. Kennedy
Jas. H. Kennedy

Mr. Jones
Saco-Lowell

Mr. Hubbard
Saco-Lowell

Mr. Cansler
Saco-Lowell

Mr. Wright
Saco-Lowell

Charles R. Blossom has been appointed assistant sales manager, rayon filament yarns, **Celanese Corp. of America,** textile division. He will be located at division headquarters in Charlotte, N. C. * * * E. G. Mann has been transferred to the New England district sales office. D. O. Robbins has been moved to the New York district to replace Mr. Mann, and E. L. Cloaninger has replaced Mr. Robbins in the southern district.

A new firm, **James H. Kennedy & Co.,** has been established in Westport, Conn., by James H. Kennedy, formerly director of communications for Bruce Payne & Associates. The new company will specialize in public relations and direct mail for medium-sized businesses. The organization will assume responsibility for follow-through as well as initiation of creative ideas.

The Yale & Towne Manufacturing Co. has appointed Thomas N. Parlon sales manager for Yale electric lift trucks, Yale Materials Handling division. He replaces Charles E. Howard who has been named manager of attachment sales for the division.

Harry K. Smyth has been appointed vice-president and assistant general manager of the gear and machine division of **Saco-Lowell Shops** in Sanford, N. C. He succeeds Elmer J. McVey, who resigned. Howard J. Haug has been named manufacturing manager of the division. Changes in the sales organization of the textile machinery division were also announced. J. Woodward (Woody) Hubbard has been named general sales manager, and Herman J. Jones was appointed assistant general sales manager. Edward C. Cansler succeeds Mr. Hubbard as district sales manager of the Charlotte, N. C., district and James E. Wright replaces Mr. Jones as Atlanta, Ga., district manager. * * * A research and development center is being built in Clemson, S. C. The construction is scheduled for completion by the middle of next year, and the firm's research facilities will be moved to the new location. * * * The board of directors, company officials, and key personnel visited the company's operations in the Carolinas recently. According to Thomas J. Ault, president, the threefold purpose of the trip was to allow the group to see results of the consolidation of textile machinery manufacturing and sales in the South, to interchange ideas, and to gain information on customers' needs from the salesmen who have daily contact with them.

Hadley-Peoples Manufacturing Co. has established a sales office in Charlotte, N. C. The new office is under the direction of Charles A. Wetzell.

William Heller, Sr., has been elected honorary chairman of **Milprint, Inc.** He continues actively with the company in an advisory capacity. Roland N. Ewens has been named chairman and chief executive officer. Arthur Snapper has been named president.

J. W. Collier Co., Inc., has appointed D. C. O'Hair Co. as exclusive sales representatives of the Collier textile repair and parts services in the states of Virginia and North Carolina.

Lane C. Burris of **Hollister-Moreland Co., Inc.,** has moved to Greensboro, N. C. His new address is P. O. Box 9084, Greensboro, N. C. His territory and duties remain unchanged.

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P. O. BOX 406 ANDERSON, S. C.

Executive views *(from page 51)*

doesn't understand what inflation is or what it does to him, and he is far more interested in his next wage increase than in the shrinking value of his life insurance policy and whatever other savings he may have.

IT HAS BEEN our opinion for many years that the business people of the United States largely deserve what has happened to them at the hands of New Dealers and other crackpots. The people who are the enemies of the American economic system have been well organized to disrupt it, but the people who run it and make it work and provide the highest standard of living ever known to man, have been curiously unwilling to unite in defense of this system and to try to make the general public understand what is being done to the people by these rattlebrained economic policies which have been in vogue for so many years, and which now seem to be acclaimed by both political parties alike.

The present attitudes of both political parties offer not the slightest hope that the federal budget will ever be balanced again. It hasn't really been balanced for nearly 30 years. Technically it has several times, but practically, it hasn't, and the appearance of a balance was just a matter of tricky bookkeeping. When a government has steadily raised its national debt from around 30 billion dollars to 280 billion, it is futile to claim that technically no actual deficit financing was done in one fiscal year simply because the borrowings of a previous year tided the government over a 12-months' period without recourse to more borrowings.

A budget can only be called balanced when income and outgo offset each other consistently over a period of years, and when deficits are a minor matter in one year and are offset by an equal surplus in the following year.

What a government can not pay for, it can not afford, and when the people are unwilling to be taxed to raise money for things a government thinks are desirable, it is quite dishonest of that government to go ahead and spend the money anyway by getting the money through the hidden tax of inflation, which cheats the people by taking away from them while pretending to give them something.

Shuttleless loom *(from page 55)*

Harness-cam contact is by clock-type springs, with adjustable-hook connections. Harness bottoms are connected to treadles by rigid but adjustable rods.

Adjustment of harness spring tension is by a worm, with indicator dial.

The clamping member which holds the reed in place also acts as a gauge point for locating the bottom of the warp sheet—important in loom adjustment, since bottom shed line must always be correctly set in relation to tape travel.

Take-Up. High-roll take-up is used, with motion imparted to the take-up roll from a pick-wheel driven through pawls from a crank.

Range of picks per inch is 4 to 292.

A let-back spring in the gear case provides the torque required for letting back.

Wind-Up. Woven cloth is wound on wooden or paper rolls. Maximum cloth-roll diameter is 24 inches.

The cloth-roll will hold 1300 yd of 80 x 80 print cloth, giving a possible time between doffs of about 315 hr; or 1100 yd of 64 x 64 sheeting, doffing time over 200 hr; or 350 yd Canton flannel, doffing time 38 hr.

There is a full-roll knock-off.

Other Features. The filling stop-motion is of the mechanical center-fork type.

Drive is by a 1-hp clutch-brake motor, flange-mounted at the right-hand loomside. Speed changes are made by changing pinions on the motor shaft.

Let-off is of the constant-tension, Bartlett type. Warp tension is adjustable through springs.

All mechanisms on the loom are interconnected, with positively controlled timing of filling insertion, filling cutting, harness crossing, etc. These mechanisms are all timed to the handwheel of the machine, which is graduated in degrees and provided with a marker.

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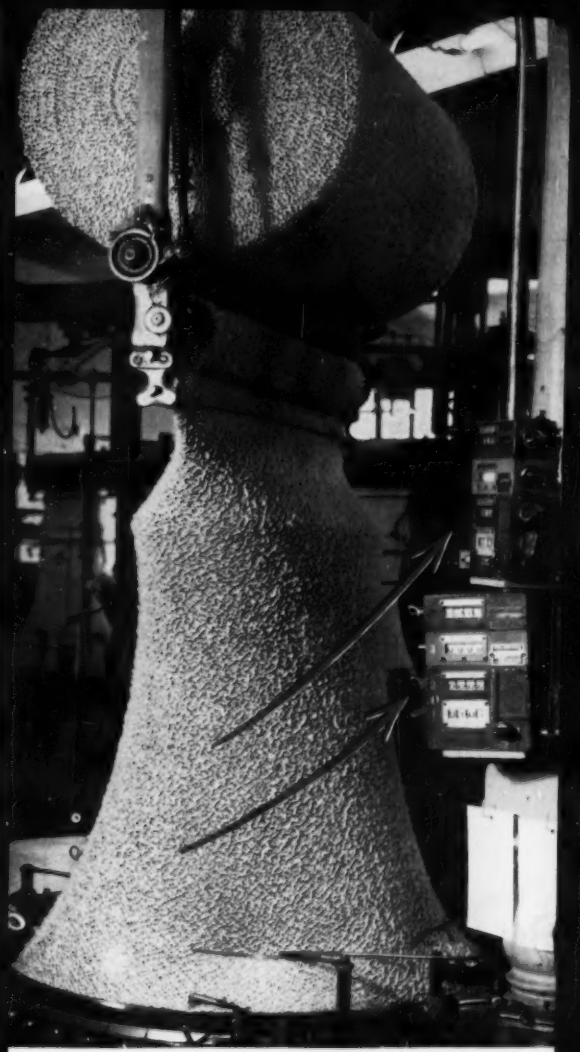

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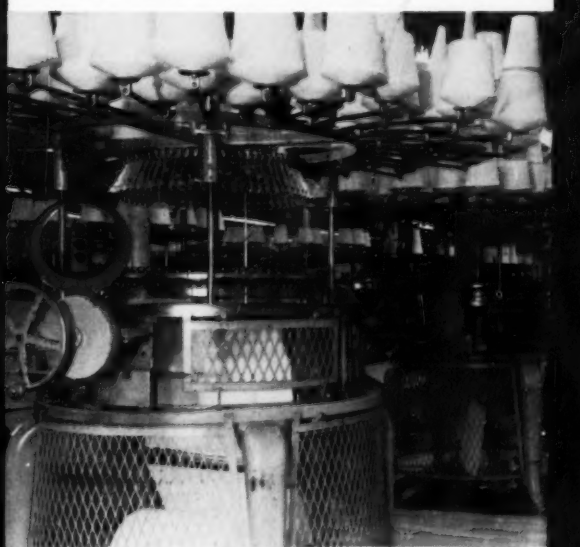

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